CONSTRUCTION NEWS

PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

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PERSONAL.

Mr. James H. Hutchinson has been appointed Division Superintendent of the St. Louis & San Francisco Ry. at Sherman, Tex.

Mr. G. E. Edmonton has been appointed General Superintendent of the West Side Belt Ry., with headquarters at Pittsburg, Pa.

Mr. R. R. Lang, City Clerk of Stratford, Ont., will receive applications up to April 15 for the position of City Engineer of Stratford.

Mr. Edwin K. Morse, C. E., formerly with office in the Carnegie Bldg., has removed to the Farmers' National Bank Bldg., Pittsburg, Pa.

Mr. J. M. Stark has been appointed Principal Assistant Engineer of the Chicago, Oklahoma & Gulf Ry., with headquarters at Little Rock, Ark.

Mr. Robert W. Chaffee, Assistant Engineer in the Water Department of New London, Conn., has resigned to accept a position in the government service.

Mr. E. F. Brooks, General Superintendent of the Philadelphia, Baltimore & Washington Ry., will remove his headquarters from Philadelphia to Wilmington, Del.

Mr. A. W. A. Eden, formerly of Brooklyn, N. Y., is now connected with the Engineering Department of the Berlin Construction Co., and is located at Kensington, Conn.

Judge George Hillyer has resigned as a member of the Board of Water Commissioners, of Atlanta, Ga., with which body he has been associated for the past ten years.

Mr. Emerson Gee has resigned as Manager of the California King Gold Mining Co. and is now Consulting Engineer for that company, with headquarters at Los Angeles, Cal.

Mr. Charles M. Warner, of the Warner-Quinlan Asphalt Co., 32 Broadway, New York, has started on a trip to Mexico with a view of purchasing several asphalt deposits near Tampico.

Mr. J. E. Simons, formerly Superintendent of Rolling Stock and Machinery of the Pittsburg Coal Co., has been appointed General Manager of the O. M. Edwards Co., of Syracuse, N. Y.

Mr. W. B. Fisher has resigned as General Manager of the American Zinc, Lead & Smelting Co., of Carthage, Mo., and has gone to Colorado Springs, Colo., where he will reside for the summer.

Mr. E. L. Kingsbury has been elected President of the Kansas Southwestern Ry., and is succeeded as Secretary and Auditor by Mr. H. R. M. Smith, both having the offices at Arkansas City, Ark.

Mr. Glenn D. Holmes, of Batavia, N. Y., has recently been appointed Assistant Engineer in the employ of the New York Water Supply Commission and has established his field office at Fishkill Village, N. Y.

Mr. L. P. Yale has resigned his position as Chief Engineer of the Missouri, Kansas & Oklahoma Ry., and is now a member of the Winston & Yale Construction Co., Contractors, of Chicago and Minneapolis.

Mr. J. B. Hutchinson, former General Manager of the Pennsylvania R. R., who has been abroad for several months, will return home in time to take up his duties as Assistant to First Vice-President Pugh on May 1.

Mr. George T. Slade, General Superintendent of the Erie Division of the Erie R. R., has been appointed General Superintendent of the Great Northern Ry., with headquarters at St. Paul, Minn., succeeding Mr. F. E. Ward.

Mr. J. C. Patterson has been appointed Assistant to the Chief Engineer of the Great Northern Ry., with headquarters at St. Paul, Minn., and Mr. W. P. Whitten is appointed his successor as Resident Engineer at that point.

Mr. Isidor Davidov, Consulting Engineer to the Santa Gold Placer Co. and the Santa Margarita, El Cordero and Los Clures Gold Mining companies, located in the Department of Antigua, U. S. of Colombia, is reported to be in New York city.

Mr. George J. Ray has been appointed Division Engineer on the Main Line Division of the Delaware, Lackawanna & Western R. R., also on the branches between Portland and Binghamton, N. Y., with office at Scranton, Pa., succeeding Mr. J. I. Riegel, resigned.

Mr. George F. Rowell has resigned as Assistant Engineer of the Pennsylvania Water Co., and has accepted a position as Assistant Engineer with the Susquehanna Canal & Power Co. His new address will be 1402 Continental Trust Bldg., Baltimore, Md.

Mr. W. S. Lee, Jr., has resigned as Chief Engineer of the Columbus Power Co., Columbus, Ga., to accept a position as Chief Engineer of the Catawba Power Co., Rock Hill, S. C. He has, however, been retained as Consulting Engineer to the first named company.

Mr. C. A. Hornbeck, Superintendent of the National City & Otay Ry., has been appointed General Manager of the San Diego, Cuyamaca & Eastern Ry. Co., in connection with his other duties, with headquarters at San Diego, Cal., succeeding the late Mr. Waldo S. Waterman.

Mr. Arthur S. Tutle, C. E., Assistant Engineer of the Board of Estimate and Apportionment of Brooklyn, N. Y., delivered a lecture before the Departments of Engineering and Photography, Brooklyn Institute, on March 27, on "Water Supply and Irrigation on the Hawaiian Islands."

Mr. W. K. Christie, Division Master Mechanic of the Pere Marquette R. R., has been made Master Mechanic of the entire system in charge of all equipment, consequent upon the resignation of Mr. D. B. Haskell, Superintendent of Motive Power, and the abolition of the latter title.

Mr. W. E. Moore has resigned as General Superintendent and Engineer of the Augusta Ry. & Electric Co. and the Gas Light Co., of Augusta, to take effect as soon as his successor can be appointed, and will take up similar work with the West Pennsylvania Ry. & Lighting Co., of Pittsburg, Pa.

Mr. Oren Root, Jr., Assistant General Manager of the Metropolitan St. Ry. Co., of New York, has been appointed General Manager of that company, succeeding Mr. H. H. Vreeland. Mr. Root has been connected with the company for the past nine years. He is a graduate of Hamilton College.

Mr. Elliott Holbrook, M. Am. Soc. C. E., who recently resigned the position of Chief Engineer of the Kansas City Southern Ry., has been appointed Chief Engineer of the Missouri, Kansas & Oklahoma Ry., with offices at Coffeyville, Kan. This is a new line (now under construction) of the Missouri, Kansas & Texas Ry. system.

Mr. W. C. Loree, Superintendent of the Chicago Division of the Baltimore & Ohio R. R., has been appointed General Superintendent of that road, with headquarters at Pittsburg, Pa., succeeding Mr. I. C. Rawn, resigned. Mr. T. J. Foley, Assistant to the General Manger at Baltimore, Md., succeeds Mr. Loree, with offices at Chicago.

Mr. Harry A. Lee, Commissioner of Mines of Colorado, and Mr. John Wellington Finch, State Geologist of Colorado, have effected a partnership under the firm name of Lee & Finch, with offices in the Equitable Bldg., Denver, Colo., for general practice in mining engineering and economic geology, etc. Mr. Lee will not assume an active part in the firm until about May 20.

Mr. J. E. Schwitzer is appointed Division Engineer of the Central Division of the Canadian Pacific Ry., with headquarters at Winnipeg, Man., and Mr. A. S. Dawson Division Engineer of the Western Maryland, with headquarters at Calgary, Man. The Central Division is composed of the main line and branches between Port Arthur, Pasqua and Estevan, and the Western Division of the main line and branches between Portal Laggon and Kootenay Landing.

Messrs. Vandevanter & Hood, recently formed to carry on a practice in civil engineering, have opened an office in the Equitable Bldg., Baltimore, Md. Mr. C. O. Vandevanter was for 14 years Chief Engineer of the Western Maryland R. R. He severed his connection with that company when it was sold. Mr. Hood has been connected with the Pennsylvania R. R. as a civil engineer, and with the Missouri Pacific Ry. as Resident Engineer at Lake Providence, La., and in a similar capacity with the Seaboard Air Line Ry. at Cedartown, Ga.

OBITUARY.

Mr. George W. Hancock, a former civil engineer, died at Merion, Pa., on March 22, aged 67 years.

Mr. D. F. Rheinhardt, of Dillon, Mont., for several years Superintendent of the Hecla Consolidated Mining Co., Hecla, died last week at Dillon.

Mr. Charles F. Babcock, formerly a civil engineer, and since 1861 Principal of the Holden School, of Chicago, Ill., died at his home in that city on March 21. Mr. Babcock was born 70 years ago at Sherborn, Mass., and went to Chicago in 1855. He was employed for a time as Engineer in charge of the Construction Department of the Joliet & Chicago R. R., now the Chicago & Alton Ry.

Mr. A. W. Morley, Chief Engineer, U. S. N., died at his home in Brooklyn, N. Y., on March 25. Mr. Morley had been connected with the navy since the Civil War. He was promoted to Chief Engineer in 1882, and was assigned to special duty with the Advisory Board, upon whose recommendation the reorganization of the navy was begun. He was Chief Engineer of the battleship "Maine" when she was first put into commission. He retired in 1895.

Mr. James T. Stratton, a retired civil engineer and surveyor, died at his home in Oakland, Cal., on March 15, aged 72 years. Mr. Stratton was born in Thompsonville, N. Y., received his education in public schools and at Columbia University of New York. In 1847 he joined the engineering corps of the Hudson River Ry. He went to California, via the Isthmus of Panama, in 1850, and the following spring went to the mines located on the North Fork of the American River. In 1853 he again took up surveying and civil engineering, and continued that practice until 1876, when he had to abandon surveying owing to his failing eyesight. In 1873 he was appointed by President Grant U. S. Surveyor General for California. In 1880-83 he was Chief Deputy State Surveyor General with the late Jas. W. Shanklin.

Mr. David Joy, a well-known inventor, died during the week of March 9 at his home in Hamstead, England, aged 78 years. Mr. Joy's first position of importance was with the Nottingham & Grantham Ry. in 1850; his next appointment was as Locomotive Superintendent of the Oxford, Worcester & Wolverhampton Ry., and in 1856 he went back to the Railway Foundry at Leeds, where he had early been connected. In 1857 he patented a compound marine engine. Later he invented a steam reversing gear, hydraulic organ blowers and a pneumatic hammer. In 1862 he started business for himself at Middlesbrough at the Cleveland Engine Works. In 1873 he was given the agency of the Howard water-tube boiler, and the following year was placed in charge of the manufacture of that boiler by the Barrow Steel Co. In 1879 he invented the radial valve gear bearing his name. The following year he accepted the London agency for the Barrow Shipbuilding Co., but retired a year later.

ENGINEERING SOCIETIES.

COMING MEETINGS.

NATIONAL ELECTRIC LIGHT ASSOCIATION.
May 26, 27 and 28. Convention at Chicago, Ill. Secy., James B. Cahoon, 136 Liberty St., New York city.

AMERICAN SOCIETY OF CIVIL ENGINEERS.
June 8. Annual convention at Asheville, N. C. Secy., C. W. Hunt, 220 W. 57th St., New York.

AMERICAN FOUNDRYMEN'S ASSOCIATION.
June 9, 10, 11. Annual convention at Milwaukee, Wis. Secy., Richard Moldenke, P. O. Box 432, New York city.

INTERNATIONAL ASSOCIATION OF CAR ACCOUNTANTS AND CAR SERVICE OFFICERS.
June 17, 18. Annual meeting at Quebec, Canada. Secy., L. G. Corcoran, Buffalo, N. Y.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
June 22 to 26. Annual meeting at Saratoga, N. Y. Secy., Prof. F. R. Hutton, 12 West 31st St., New York city.

AMERICAN WATER-WORKS ASSOCIATION.
June 23 to 26. Annual meeting at Detroit, Mich. Secy., J. M. Diven, Elmira, N. Y.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
June 29, July 2. Annual convention at Niagara Falls, N. Y. Secy., R. W. Pope, 95 Liberty St., New York.

AMERICAN STREET RAILWAY ASSOCIATION.
Sept. 2 to 4. Annual convention at Saratoga Springs, N. Y. Secy., T. C. Pennington, 2020 State St., Chicago, Ill.

THE ELECTRIC CLUB OF PITTSBURG, PA.—We noted a year ago the organization of this club by the officers and engineers of the Westinghouse Electric Co. The club has just issued a neat pamphlet giving its list of members, officers, committees, plan of work, etc. The club has now a membership of 492, and occupies commodious rooms on the second floor of the Hamnett Building, in Wilkinsburg. It appears to have become an important force for social and professional improvement among the large force of engineers connected with the Westinghouse Electric Co. The pamphlet should be of value to anyone interested in "social engineering," and may be obtained by addressing the club at its headquarters, 735 Penn Ave., Wilkinsburg, Pa.

THE ENGINEERS' CLUB OF PHILADELPHIA.—A business meeting of the club will be held on Saturday, April 4. Mr. L. Y. Schermerhorn will read a short paper on "The Obstruction of the Navigation of Southern Rivers by the Growth of the Water Hyacinth." Dr. E. K. Landis will read a paper on "The Richards Prismatic Stadia Used as a Range Finder."

At the regular meeting on March 21, there were 68 members and visitors present, and Mr. Howard W. Du Bois presented a paper on "Reconnoissance Methods of Surveying in a Mountainous District." The work described was done in connection with a mining reconnoissance made during the past two open seasons along the main range of the Rocky Mountains.

MUNICIPAL ENGINEERS OF THE CITY OF NEW YORK.—A meeting for the adoption of a constitution, and for the election of a committee to nominate permanent officers will be held at the house of the American Society of Mechanical Engineers, 12 West 31st St., on April 3. The constitution, as proposed, states that the objects of the society

shall be to further the material development of the city of New York, to elevate the standard of efficiency and harmonize the work of the engineering staffs of the several departments of the public service, and to promote the technical, professional and social interests of the engineers in the employ of the city.

Civil, mechanical and electrical engineers, architects and chemists, or assistants thereto, who have been in the employ of the city for the six months prior to their application are eligible to membership in the society, subject to the approval of the board if directors as to the technical and personal qualifications of the applicants. The annual dues are to be $10 a year. Up to March 27 a total of 257 members had been enrolled. Mr. O. F. Nichols, M. Am. Soc. C. E., is Chairman, and Mr. Arthur S. Tuttle, M. Am. Soc. C. E., is Secretary of the Committee on Organization, and either of them may be addressed to P. O. Box 256, New York City.

CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS

Bids to be opened.	Work.	Place.	See Eng. News.
Apr. 2.	Paving,	Cleveland, O.	Mar. 26
Apr. 2.	Riprap bulkhead,	New York, N. Y.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 2.	Water valves,	Cleveland, O.	Mar. 26
	Advertised, Engineering News, Mar. 26.		
Apr. 2.	Mooring stones,	Portland, Me.	Mar. 19
Apr. 2.	Bridge,	Erie, Pa.	Mar. 19
	Advertised, Engineering News, Mar. 19.		
Apr. 2.	Ice breaker, etc.,	Tompkinsville, N. Y.	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 2.	River improvement,	Philadelphia, Pa.	Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 2.	Sewers,	Cleveland, O.	Mar. 12
Apr. 2.	Jetty,	Washington, Del.	Mar. 12
	Advertised, Eng News, Mar. 12 to Apr. 2.		
Apr. 3.	Water tower,	Joliet, Ill.	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 3.	Dredging,	New York, N. Y.	Mar. 26
Apr. 3.	Water pipe,	Toledo, O.	Mar. 26
Apr. 3.	Water-works,	Brookville, O.	Mar. 26
Apr. 3.	Concrete weir,	Atlantic City, N. J.	Mar. 26
	Advertised, Engineering News, Mar. 26.		
Apr. 3.	Retaining walls,	Troy, N. Y.	Apr. 2
Apr. 3.	Railway work,	Penn. Lines West	Apr. 2
Apr. 4.	Paving,	Greneville, O.	Apr. 2
Apr. 4.	Cables,	Washington, D. C.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 4.	Paving,	Derry, N. H.	Mar. 26
Apr. 4.	Sewer system,	Plymouth, Mass.	Mar. 26
Apr. 4.	Viaduct,	Buffalo, N. Y.	Mar. 26
	Advertised, Engineering News, Mar. 26.		
Apr. 4.	Electric light system,	Fort Barrancas, Fla.	Mar. 26
Apr. 4.	Dredging,	Montgomery, Ala.	Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 6.	Sewer and paving,	Vallejo, Cal.	Feb. 19
Apr. 6.	Power house and electric ry,	Biloxi, Miss.	Mar. 26
	Advertised, Engineering News, Mar. 26.		
Apr. 6.	Sewer,	Canton, O.	Mar. 12
Apr. 6.	Building,	Minneapolis, Minn.	Mar. 12
	Advertised, Engineering News, Mar. 12.		
Apr. 6.	Roads,	Fort Caswell, N. C.	Mar. 12
Apr. 6.	Sewer,	Madrid, Ia.	Mar. 12
Apr. 6.	Paving,	Fort Rodman, New Bedford, Mass.	Mar. 12
Apr. 6.	Building,	Cleveland, O.	Mar. 12
Apr. 6.	Bridge,	Holbrook, Ariz.	Mar. 12
Apr. 6.	Pumping engine,	Fargo, N. Dak.	Mar. 12
Apr. 6.	Bridge,	San Luis Obispo, Cal.	Mar. 19
Apr. 6.	Bridge work,	Petrolea, Ont.	Mar. 19
Apr. 6.	Bridge,	Raton, N. Mex.	Mar. 19
Apr. 6.	Paving,	Fort Riley, Kan.	Mar. 19
Apr. 6.	Buildings,	San Francisco, Cal.	Mar. 19
Apr. 6.	Sewer,	Vicksburg, Miss.	Mar. 26
Apr. 6.	Grading,	Hasbrouck Heights, N. J.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 6.	Crushed stone,	Hasbrouck Heights, N. J.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 6.	Fire alarm system,	Washington, D. C.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 6.	Bridge iron,	Grand Forks, N. Dak.	Mar. 26
Apr. 6.	Pump, etc.,	Jacksonville, Fla.	Mar. 26
Apr. 6.	Street lighting,	Webster Groves, Mo.	Mar. 26
Apr. 6.	Water tower, pipe, etc.,	Richmond, Va.	Mar. 26
Apr. 6.	Cement and broken stone,	Ft. Wadsworth.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 6.	Water meters,	Victoria, B. C.	Apr. 2
Apr. 7.	Sewer system,	Culpeper, Va.	Apr. 2
Apr. 7.	Paving,	New York, N. Y.	Apr. 2
Apr. 7.	Bridge piers, etc.,	New York, N. Y.	Mar. 26
Apr. 7.	Water-works,	Truman, Minn.	Mar. 19
Apr. 7.	Bridges (15),	Bluffton, Ind.	Mar. 19
Apr. 7.	Water-works,	Biloxi, Miss.	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 7.	Roads,	New York, N. Y.	Mar. 19
Apr. 7.	Building,	Webster, S. Dak.	Mar. 19
Apr. 8.	Building,	Richmond, Ky.	Mar. 12
	Advertised, Engineering News, Mar. 12.		
Apr. 8.	Power house,	Los Angeles, Cal.	Mar. 19
Apr. 8.	Sewers,	Canajoharie, N. Y.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 8.	Cement and broken stone,	Ft. Hamilton	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 8.	Paving,	Annapolis, Md.	Apr. 2
Apr. 8.	Bridges (8),	Crawfordsville, Ind.	Mar. 26
Apr. 8.	Bridges (7),	Angola, Ind.	Apr. 2
Apr. 8.	Bridge,	Colfax, Wash.	Apr. 2
Apr. 8.	Quick lime,	Brooklyn, N. Y.	Apr. 2
Apr. 9.	Grading,	South Bend, Wash.	Apr. 2
Apr. 9.	Machinery,	Cleveland, O.	Apr. 2
Apr. 9.	Hot water system,	Xenia, O.	Apr. 2
Apr. 9.	Paving,	New York, N. Y.	Apr. 2
Apr. 9.	Comfort station,	New York, N. Y.	Apr. 2
Apr. 9.	Light plant,	New York, N. Y.	Apr. 2
Apr. 9.	Mechanical stokers,	Cleveland, O.	Apr. 2
Apr. 9.	Masonry pedestals,	New York, N. Y.	Apr. 2
Apr. 9.	Stand-pipe,	Dyersburg, Tenn.	Mar. 26
Apr. 9.	Sewers,	Bridgeport, Conn.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 9.	Building,	Sheldon, Ia.	Mar. 26
Apr. 9.	Laying water pipe,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 9.	Building,	Kalamazoo, Mich.	Mar. 12
	Advertised, Engineering News, Mar. 12.		
Apr. 9.	Dredging,	Mobile, Ala.	Mar. 12
	Advertised, Eng. News, Mar. 12 to Apr. 9.		
Apr. 10.	Water main,	New London, Conn.	Mar. 19
Apr. 10.	Road improvements,	Napoleon, O.	Mar. 26
Apr. 10.	Water supply,	Port Townsend, Wash.	Mar. 26
Apr. 10.	Sewer,	Maywood, Ill.	Apr. 2
Apr. 10.	Laying water pipe,	Falmouth, Mass.	Apr. 2
Apr. 10.	Bridge,	Salem, Mass.	Apr. 2
Apr. 10.	Dredging,	Washington, D. C.	Apr. 2
Apr. 11.	Viaduct,	Buffalo, N. Y.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 11.	Bridge,	Akron, O.	Apr. 2
Apr. 11.	Paving and sewers,	Youngstown, O.	Mar. 26
Apr. 11.	Bridges,	Wichita, Kan.	Mar. 26
Apr. 11.	Breakwater,	Petoskey, Mich.	Mar. 19
	Advertised, Eng. News, Mar. 19 to April 9.		
Apr. 11.	Portland cement,	Marquette, Mich.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 11.	Canal work,	Chattanooga, Tenn.	Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 12.	Paving,	Columbus, O.	Mar. 26
Apr. 13.	Paving,	Cincinnati, O.	Mar. 26
Apr. 13.	Bridges, (13),	Williamsport, Ind.	Mar. 26
Apr. 13.	Bridges (2),	San Bernardino, Cal.	Mar. 26
Apr. 13.	Paving,	Toledo, O.	Mar. 19
Apr. 13.	Paving,	Cincinnati, O.	Apr. 2
Apr. 13.	Paving,	Houston, Tex.	Apr. 2
Apr. 13.	Paving,	Des Moines, Ia.	Apr. 2
Apr. 13.	Wharf,	Portland, Ore.	Apr. 2
Apr. 13.	Electric light plant,	Columbus, O.	Apr. 2
Apr. 14.	Building,	Merced, Cal.	Apr. 2
Apr. 14.	Riprap stone,	Washington, D. C.	Apr. 2
Apr. 14.	Water tower,	Marshall, Tex.	Apr. 2
Apr. 14.	Riprap stone,	Virginia.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 14.	Railway (Deepwater Ry),	Beckley, W. Va.	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 14.	Bridge work,	Columbus, O.	Mar. 19
Apr. 14.	Dredging,	Camden Harbor, Me.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 14.	Sewers,	Columbus, O.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 9.		
Apr. 14.	Bridges,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 15.	Building,	Corsicana, Tex.	Mar. 26
Apr. 15.	Building,	New Bedford, Mass.	Mar. 26
Apr. 15.	Dredging,	Norfolk, Va.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 9.		
Apr. 15.	Laying water pipe, etc.,	Enfield, N. H.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 15.	Electric plant,	Liverpool, N. S.	Mar. 26
Apr. 15.	Dredging,	New York, N. Y.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 15.	Building materials,	Pineridge, S. Dak.	Mar. 19
Apr. 15.	Paving materials,	Traverse City, Mich.	Apr. 2
Apr. 15.	Building,	Union, S. C.	Apr. 2
Apr. 15.	Sewers,	Amsterdam, N. Y.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 15.	City engineer's position,	Stratford, Ont.	Apr. 2
Apr. 15.	Sprinkling carts (2),	La Crosse, Wis.	Apr. 2
Apr. 15.	Floating baths,	Brooklyn, N. Y.	Apr. 2
Apr. 15.	Building,	Olney, Ill.	Apr. 2
Apr. 16.	Building,	Dennison, O.	Apr. 2
Apr. 16.	Sidewalks,	Fort Washington, Md.	Apr. 2
Apr. 16.	Bridge plans,	Saginaw, Mich.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
Apr. 16.	Bridges (6),	Indianapolis, Ind.	Apr. 2
Apr. 16.	Paving,	Williamsport, Pa.	Mar. 26
	Advertised, Eng. News, Mar. 26 and Apr. 2.		
Apr. 16.	Building,	Monroeville, Ala.	Mar. 26
Apr. 16.	Paving,	Houston, Tex.	Mar. 26
Apr. 16.	Water valves,	Cleveland, O.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 16.	Bridge,	Anadarko, Okla. Ter.	Mar. 26
Apr. 17.	Dredge,	St. Augustine, Fla.	Feb. 19
	Advertised, Feb. 19, Mar. 5, 19, and Apr. 2.		
Apr. 17.	Building,	New York, N. Y.	Apr. 2
Apr. 17.	Wharf work,	Quebec, Que.	Apr. 2
Apr. 18.	Bridge,	Cleveland, O.	Apr. 2
Apr. 18.	Paving,	Findlay, O.	Mar. 19
Apr. 18.	Paving,	Evansville, Ind.	Mar. 19
Apr. 20.	Harbor improvements,	Jamaica	Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 20.	Dredging,	New York, N. Y.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 20.	Building,	Reedsburg, Pa.	Mar. 26
Apr. 20.	Dredging,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 20.	Cement and broken stone,	Boston, Mass.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 20.	Bridges (3),	Zanesville, O.	Mar. 26
Apr. 20.	Artesian well,	Fort Ringgold, Tex.	Mar. 26
Apr. 20.	Paving,	Louisville, Ky.	Apr. 2
Apr. 22.	Locomotive,	Fort Monroe, Va.	Apr. 2
Apr. 20.	Water-works,	Oakland City, Ind.	Apr. 2
Apr. 20.	Paving,	Terre Haute, Ind.	Apr. 2
Apr. 20.	Drainage ditch,	St. Cloud, Minn.	Apr. 2
Apr. 21.	Building,	Great Bend, Kan.	Apr. 2
Apr. 21.	Paving,	Shawnee, O. T.	Apr. 2
Apr. 21.	Paving,	Nevada, Mo.	Apr. 2
Apr. 21.	Paving,	Cincinnati, O.	Apr. 2
Apr. 21.	Bridge,	Lincoln, Neb.	Apr. 2
Apr. 21.	Sewage pumping plant,	Calcutta, India	Mar. 26
Apr. 21.	Vessel,	Chicago, Ill.	Mar. 12
Apr. 22.	Steel lock gates,	Nashville, Tenn.	Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 22.	Dredging,	New York, N. Y.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 23.	Buildings,	Cheyenne, Wyo.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 23.	Dredging,	New London, Conn.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 24.	Brkwtr superstructure,	Marquette, Mich.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 16.		
Apr. 25.	Water-works,	Reuteria, Spain.	Mar. 19
Apr. 25.	Building,	Whipple Barracks, Prescott, Ariz.	Apr. 2
Apr. 25.	Armored cable, etc.,	Cleveland, O.	Apr. 2
Apr. 25.	Bridge abutments,	Dayton, O.	Apr. 2
Apr. 26.	Paving,	Vallejo, Cal.	Apr. 2
Apr. 26.	Electric plant,	Denver, Colo.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 30.		
Apr. 27.	Paving,	Lafayette, Ind.	Apr. 2
Apr. 27.	Building,	Richmond, Ky.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
Apr. 28.	Sewer system,	Cape May, N. J.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 28.	Road,	Cape May, N. J.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 30.	Stone,	Portland, Ore.	Mar. 26
	Advertised, Eng. News, Mar. 26 to Apr. 23.		
Apr. 30.	Rock removal,	Norfolk, Va.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 16.		
Apr. 30.	Cement, sand, etc.,	Washington, D. C.	Apr. 2
	Advertised, Eng. News, April 2 to 30.		
May 1.	Sewer,	Cheyenne, Wyo.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 23.		
May 1.	Military supplies,	West Point, N. Y.	Apr. 2
	Advertised, Eng. News, April 2 to 30.		
May 1.	Dredging,	Boston, Mass.	Apr. 2
	Advertised, Eng. News, April 2 to 30.		
May 1.	Street cleaning,	Washington, D. C.	Apr. 2
	Advertised, Eng. News, Apr. 2 to May 14.		
May 2.	Sinking wells,	Cheyenne, Wyo.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 30.		
May 4.	Building,	Memphis, Tenn.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
May 4.	Building,	Abbeville, Ga.	Mar. 26
May 4.	Bridge,	Quincy, Cal.	Mar. 26
May 6.	Building,	Norwich, Conn.	Apr. 2
	Advertised, Eng. News, Apr. 2 and 9.		
May 8.	Steam heating,	Shakopee, Minn.	Mar. 26
May 11.	Tail-race tunnel,	Toronto, Ont.	Apr. 2
	Advertised, Eng. News, Apr. 2 to May 14.		
May 12.	Gas holder,	Copennagen, Denmark.	Mar. 26
	Advertised, Engineering News, Mar. 26.		
May 12.	Pumping engine,	Toronto, Ont.	Mar. 19
	Advertised, Eng. News, Mar. 19 to April 9.		
May 15.	Drainage,	Tomah, Wis.	Apr. 2
	Advertised, Eng. News, Apr. 2 to 30.		
May 18.	Bridge,	Fredericton, N. B.	Apr. 2
	Advertised, Engineering News, Apr. 2.		
May 19.	Gunboats (2),	Washington, D. C.	Apr. 2
May 30.	Harbor improvements,	Jamaica.	Apr. 2
	Advertised, Eng. News, Apr. 2 to May 14.		
June 13.	Railway materials,	Siam.	Feb. 5
Jun. 15.	Breakwater,	Manila, P. I.	Mar. 12
	Advertised, Eng. News, Mar. 12 to May 14.		
July 1.	Electric lighting, etc.,	Rangoon, India	Feb. 5
May 2, '04.	Railway,	South Australia.	Feb. 5
No date.	Water tanks,	Toronto, Ont.	Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 19.		
"	Railway grading (St. Rys),	Springfield, O.	Mar. 26
	Advertised, Engineering News, Mar. 26.		

RAILWAYS.

ATCHISON, TOPEKA & SANTA FE.—The company has petitioned the trustees of Emeryville, Cal., and the council of Oakland for a franchise for making various improvements in those towns in the nature of spur tracks, switches and various buildings.——Reports from Yuma, Ariz., state that Geo. W. Norton, while in that city recently, said that a survey for a railway from Congress Junction to the Colorado River was being made by Engineer Cochran. The project is said to be in the interest of this company.

BIRMINGHAM, SELMA & GULF.—We are informed that the surveys are made and the rights of way secured for this road, but arrangements for the construction capital are not concluded and the contracting will not be taken up until that matter is cleared up. The road will be about 90 miles long and will run from Birmingham, Bessemer, Brocton, Centerville to Selma. H. C. McKee is Pres., Meridian, Miss.

BROOKVILLE & CLEARFIELD.—Surveys will begin at once to locate the route for a double-track road for this company from Franklin to Brookville, Pa. This will be the final location, the preliminaries having been made a year ago. The line will tap Clarion and Jefferson counties. Gen. Miller and O. D. Bleakley, Franklin, Pa., are interested.

BUFFALO & SUSQUEHANNA.—The State R. R. Commissioners of New York have approved of the issue of $6,000,000 mortgage bonds, part of which will be used for building a new line from Wellsville to Buffalo, N. Y.

BUTTE COUNTY R. R.—The contract for grading this road, which is held by the E. B. & A. L. Stone Co., of Oakland, Cal., will probably not be sublet, as at first intended, but will be carried out by the company itself. The road will be some 32 miles in length and will connect Chico, Cal., with the new town to be established by the Diamond Match Co., near Lovelock. Three camps had been established by March 16, and three more were then in prospect within a short time.

CALIFORNIA.—Among the various railway projects which are likely to be carried out or started during the present year are the following: The Butte County R. R., a 32-mile line in Butte county (noted above); the Sacramento & Oakland Ry., to run from East Oakland to Fruitvale, with a terminus at Sacramento, having a length of about 165 miles. Several branches are also planned; the Lincoln, San Francisco & Eastern Ry., capitalized at $500,000, will build from Lincoln to Vernon Landing. W. H. Newell and J. R. Webb are interested; the Midland Pacific, a prospective line some 130 miles long, running from the Sunset oil district, near Bakersfield, to the sea, by way of either San Luis Obispo or Guadaloupe; capital stock, $5,000,000. A. L. Weil, M. A. Lippet and P. I. Manson are interested; the Bakersfield & Ventura Ry. plans a line from Bakersfield through to Ventura by a short-cut route. It will be about 125 miles long; capital stock, $5,000,000. J. W. Burson and J. W. Swanwick, Los Angeles, are directors; the Ramona Ry. is an extension of the Cuymaca & Eastern R. R., which the residents of Ramona are petitioning for. T. P. Converse, Ramona, is interested; the Del Norte & Humboldt County R. R. will have a line through Mendocino and Humboldt counties, which will later be absorbed by the Santa Fe road; stock, $2,500,000. The headquarters are at Eureka; the Fresno Intermountain R. R., $500,000, will build a small lumber road. S. N. Griffith, L. L. Gray and M. Wallace, Fresno, are interested; the Western Pacific Ry. carries a project with its connection with the San Francisco Terminal Ry. & Ferry Co., of some 810 miles, extending from the Potrero district in San Francisco to Salt Lake.

COAL BELT R. R.—This company has been incorporated at Springfield, Ill., with a capital stock of $50,000, to build a road from the Ohio River through the counties of Pope, Hardin, Saline and Williamson. It will have its principal offices at Mason, Ill. Francis S. Peabody, Arthur W. Underwood and John A. McKeown, Chicago, are incorporators.

ERIE R. R.—It is stated that the proposed new Jersey City station and terminal will be established on the site of the present terminal at the foot of 12th St., instead of Pavonia Ave.

FORT BRAGG & SOUTHEASTERN.—Incorporated in California with $2,000,000 capital stock to build a road 100 miles in length, commencing at Fort Bragg and running to Healdsburg, connecting with the towns en route and constructing branches to lumber mills contiguous. R. H. Swayne and C. R. Johnson are among those interested.

GREENE COUNTY R. R.—George J. Gould, of New York, is reported to have instructed J. W. Patterson, Ch. Engr., Pittsburg, Toledo & Western R. R. (Wabash), to prepare plans at once for the awarding of contracts for constructing this road to Uniontown, Pa., at a cost of

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

about $7,500,000. It is expected that the awards will be made before May. Surveys have been completed and show a line some 60 miles in length, opening up extensive coal fields and giving an outlet to the Connellsville coke region.

HOUSTON, EAST & WEST TEXAS.—A. V. Kellogg, Engr. M.-of-W., Houston, Tex., informs us that there is no truth in the report of the proposed rebuilding of the line between Houston and Shreveport, La., of which note was made in our issue of March 19.

ILLINOIS CENTRAL.—It is reported that the contracts for building the second track between Fulton and Memphis, Tenn., have been awarded as follows: J. D. Lynch, Monmouth, Ill., from Fulton to Paducah Junction, 10 miles, and from Millington to Woodstock, seven miles; E. D. Smith & Co., Birmingham, Ala., from Trimble to Dyersburg, 17 miles; McArthur Bros., Chicago, from Dyersburg to Atoka, 37 miles.

JENNINGS & NORTHERN.—Articles of incorporation have been filed by this company in Louisiana with a capital stock of $3,000,000, to build a road north and south of Jennings. E. F. Rowson is Pres. and G. A. Courtney, Treas.

LOS ANGELES, DAGGETT & TONOPAH.—J. Irving Crowell, Pres. and Gen. Mgr., according to the Reno, Nev., "Journal" of March 18, announces that the construction of the road will begin within 30 days between Daggett and Salt Lake. The line will be some 300 miles long.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—Geo. M. Huss, general contractor, Birchwood, Wis., writes us that the extension from Birchwood to Reserve, Wis., will be 20 miles long, and that the grading and bridging will be contracted for at once.

MOBILE, JACKSON & KANSAS CITY.—It is said that A. G. Dancy, Engr., will at once begin the permanent survey for a line from Decatur, Miss., to the Tennessee State line. The survey is to be made to a connection with the Gulf & Chicago, which now belongs to this company, at Pontotoc. The G. & C. road is narrow gage, and the plans of the company contemplate making it standard. H. S. Jones is Ch. Engr., Mobile.

MOUNTAIN PARK, TEXAS & NORTHWESTERN.—A charter has been granted to this company in Oklahoma, with a capital stock of $4,000,000, to build a line 200 miles long from a point on the Red River in Comanche county to the northern boundary of Oklahoma, in Woodward county. The incorporators are Oklahoma capitalists.

NEW CASTLE & EASTERN.—The company completed its organization at New Castle, Pa., on March 24, with a paid in capital of $100,000, and will build its line from that city to Rose Point, Pa. E. N. Ohl is Pres., and George Greer, Vice-Pres.

NIPIGON IRON RANGE.—Cassels, Cassels & Brock, Solicitors, Toronto, Ont., advise us that application for the charter for this road is still pending in the Dominion Parliament.

NORFOLK & WESTERN.—The contract for double tracking the road from Pearisburg, Va., to Narrows, about four miles distance, has been let to L. H. Vaughan & Co., Bluefield, W. Va.

ORANGE & NORTHWESTERN.—J. W. Maxcy, Houston, Tex., writes that the surveying corps is still in the field locating this road in Texas and Louisiana, having a length of 160 miles. No construction will be undertaken at the present time.

OWENSBORO, ROCKPORT & VINCENNES.—A. H. Kennedy, Rockport, Ind., the promoter of this line, writes that the success of the project is assured. The line will be operated by both steam and electricity, according to Mr. Kennedy, and will be some 75 miles long. Surveys will begin at once, and the incorporation will soon be announced. The road will penetrate a good coal territory, and will touch at, besides the towns named, Burnsville, Oakland City, Winslow and Petersburg.

PENNSYLVANIA R. R.—Contracts are reported to have been let for improvements to the Pittsburg Division to cost $1,000,000, the successful contractors being H. S. Kerbaugh, Inc., and McMenamin & Sims, Philadelphia. The work embraces the four-tracking of the Packsaddle and reducing grades and eliminating curves between Bolivar Junction and Blairsville Intersection, a distance of about seven miles. The work will be heavy and will require about a year's time in completion.——It is stated that the Engineering Department of the Northwest system of this road (P., C., C. & St. L.) has asked for bids for construction of 40 miles of second track between Yellow Creek and Summerville and Alliance and Ravenna. The cost will be about $1,000,000. Appropriations have been authorized for double-tracking this division from Ravenna to Hudson. The alinement of the present route will be changed and some heavy cuts and fills will be necessary. Contracts are being awarded, according to reports. The company's headquarters are at Philadelphia.

PENNSYLVANIA LINES WEST OF PITTSBURG.—Bids are wanted by the P., Ft. W. & C. Ry., Chicago, until April 3 for the elevation of the tracks between 55th and 43d Sts., Chicago; also from South Park Ave. to Grand Crossing. Plans and specifications may be seen at the office of the Chief Engineer M.-of-W., Pittsburg, or at the Superintendent's office, Canal St. Station, Chicago.

ST. JOSEPH & EASTERN.—O. G. Wales, Chicago, the promoter of this road, writes us that nearly all the right of way has been secured and the capital is arranged for. The line is about half graded, and contracts will probably be let this month for construction. It will be 40 miles long and run from St. Joseph to Benton Harbor and Diamond Lake, Mich.

SHREVEPORT & RED RIVER VALLEY.—A contract is reported to have been closed by the company on March 27 with Winston Bros., of Minneapolis, Minn., and Lee & Craney Bros., of Kansas City. The work includes about 3,500,000 cu. yds. of work, and will cost nearly $1,000,000. Work will commence at once. The headquarters of the contractors will be at Baton Rouge, La., and the work of grading will commence at that point and extend a distance of 50 miles up the Mississippi River. The final destination of the line is understood to be New Orleans.

SOUTHERN RY.—This company was recently said to be calling for bids up to April 1 for a 65-mile line from Maryville, Tenn., through the Blue Ridge Mountains, to a connection with the main line in North Carolina. Surveys are made. W. H. Wells is Ch. Engr. of Construction, Washington, D. C.

TEXAS & NEW ORLEANS.—A correspondent informs us that this company is calling for bids for constructing a branch road from Sour Lake, Tex., to Sour Lake Springs, a distance of about nine miles. E. B. Cushing is Engr. M.-W., Houston, Tex.

TRANS-CANADA.—The Dominion Government has granted the promoters of this enterprise a charter. This road will run from Quebec to Port Simpson, B. C., paralleling the Canadian Pacific, but will be several hundred miles shorter than that line. Prominent capitalists of Great Britain and Canada are backing the enterprise.

UNION PACIFIC.—W. L. Park, Supt. at Cheyenne, Wyo., is quoted as saying that the company will call for bids within a month on the reconstruction of the line between Ogden, Utah, and Morgan. The work will cost about $1,500,000.

VALMONT INCLINE PLANE.—F. M. Taylor, Ch. Engr., McConnellsburg, Pa., writes that Governor Pennypacker, of Pennsylvania, has refused the second time to grant this company a charter. The line will be a steam road running from London to McConnellsburg, a distance of about five miles. It has been surveyed, but no further steps taken. D. H. Patterson is Pres., Webster Mills, Pa.

WASHINGTON.—It is reported that the Bohn Lumber Co., of Portland, Ore., has purchased several large tracts of timber in the vicinity of Kalama, Wash., and will put in a logging road. Work is to start immediately.

WHITE RIVER R. R.—The company has transferred its holdings to the St. Louis, Iron Mountain & Southern Ry., which company will build it from Batesville, Ark., to Carthage, Mo., a distance of 348 miles. W. T. Tyler is Gen. Supt. St. L., I. M. & S. Ry., St. Louis, Mo.

WILLIAMSTOWN & MOUNDSVILLE.—Preliminary work on this line is being pushed as rapidly as possible. A final survey from Williamstown to Sistersville, W. Va., has been completed, and if the franchises are granted by the town and county, contracts will be awarded within 30 days, according to reports.

WISCONSIN CENTRAL.—A new line will be built in Kenosha county, Wis., from Camp Lake Station to the village of Wilmot, about three miles distant. Chas. N. Kalk is Ch. Engr., Milwaukee, Wis.

WYOMING & BLACK HILLS.—Articles of incorporation have been filed in Wyoming, with a capital stock of $2,000,000, to build a line in South Dakota and Wyoming, to open up a vast country. It will be from 75 to 100 miles in length. Lewis C. Twombly is Pres. and Gen. Mgr.

STREET AND ELECTRIC RAILWAYS.

SPRINGFIELD, MASS.—Durkee, White & Towne, Engrs., 9292 Main St., Springfield, Mass., inform us that contracts will be let the latter part of this month for building the road of the Western Massachusetts St. Ry. Co. through Westfield, Russell and Huntington. The road will be an electric, about 35 miles in length, but only nine miles of it will be constructed this year. The rights of way have been secured and surveys completed. R. R. D. Gillett is Pres., Westfield.

WORCESTER, MASS.—The directors of the proposed Worcester & Hartford St. Ry. have applied for a franchise to build through Leicester.——The Worcester Consolidated St. Ry. has received a franchise for a new line from this city to Leominster, through West Boylston, Sterling Junction and Sterling.

NARRAGANSETT PIER, R. I.—The Sea View R. R. Co. is about to begin extensive improvements involving an expenditure of about $100,000. The proposed changes contemplate generating all the power for both operating the road and the Narragansett electric lighting plant at the power station at Hamilton. Two new engines will be installed, one of 600 HP. and the other 400 HP.; also two sets of transformers which will raise the voltage up to 10,000 volts, and a new transmission line built from Hamilton to the Pier. A new sub-station will be built at Sea View Junction, costing about $12,000.

VALLEY FALLS, R. I.—A bill is reported to have been presented to the Rhode Island legislature asking for the incorporation of the Valley Falls & Franklin St. Ry. Co., to build a line from Valley Falls, R. I., to Franklin, Mass. The capital stock is $300,000. Andrew J. Currier, Rhode Island, and Wm. H. Tobey, Chas. H. Collins and Geo. B. Harris are interested.

ANSONIA, CONN.—The contract for building the Ansonia-Seymour trolley line for the Connecticut Ry. & Lighting Co. has been let to C. W. Blakeslee & Son, of New Haven. The distance is four miles, and the contract amounts to about $50,000.

NEW YORK, N. Y.—Judge Keogh, of the Supreme Court, has granted the New York & Port Chester Electric R. R. the right to cross the public highways in Pelham, Larchmont, Rye, Mamaroneck and Port Chester with its new four-track rapid transit system. The new road will represent a cost of something like $10,000,000. W. C. Gotshall is Pres. and Ch. Engr.

TROY, N. Y.—The Schenectady Ry. Co. has authorized an issue of $7,000,000 of bonds for the extension of its lines to Amsterdam and other immediate points, as well as for the general betterment of the system.

MOUNT HOLLY, N. J.—We are informed that the Newton, Lakewood & Atlantic Ry. has been surveyed, and that nearly all the rights of way have been secured. About $80,000 has been deposited with the State Treasurer. The road will run from Newton to Hamilton Square, Allentown, Lakewood and Point Pleasant, and will be some 40 miles long. George O. Vanderbilt, 135 East State St., Newton, N. J., can give further particulars.

EASTON, PA.—The Minsi St. Ry. Co. has been incorporated, according to reports, to build a trolley from the Delaware Water Gap to Shawnee, touching all the summer resorts of the Gap and vicinity.

GREENSBURG, PA.—Mt. Pleasant, Pleasant Unity & Bagaley Elec. St. Ry. Co., with $100,000 capital stock, will begin the construction of its proposed line as soon as preliminary arrangements can be completed. The line will be about 16¼ miles long. Surveyors have already gone over the line and nearly all the right of way has been secured. Eugene T. Norton, Connellsville, D. W. Henderson and W. E. Crow, Uniontown, are interested.

LANGHORNE, PA.—W. B. Parry, Pres. Philadelphia & Langhorne St. Ry., writes that about one-half of the line has been surveyed and three-fourths of the right of way obtained. The line will be 16 miles long. Chas. H. Moon is Pres., Woodbourne, Pa.

PHILADELPHIA, PA.—John B. Parsons, Pres. Philadelphia Rapid Transit Co., has announced that the contract for the construction of the first section of the Market St. subway has been awarded to the E. D. Smith Co. The section under contract will be the only four-track part of the subway, two of the tracks being for the third-rail heavy trains and two for trolley cars. Bids for the City Hall terminal and the Schuylkill bridge will next be invited.

PHILADELPHIA, PA.—A new company, to be known as the Phoenixville & West Chester Electric Ry., will soon be chartered for the purpose of building a trolley line between Phoenixville and West Chester. Several routes are under discussion. Engineers will soon go over the proposed line and prepare estimates of its probable cost. A. D. Warner, Wilmington, Del.; W. P. Sharpless, West Chester, and R. K. S. Alleback, Phoenixville, are directors of the company.

PITTSBURG, PA.—The Pittsburg, McKeesport & Connellsville R. R. Co. has awarded a contract to the J. G. Brill Co. of Philadelphia for constructing 15 electric cars, to be 50 ft. long, with 15 seats, and a total capacity of 90 persons.

POTTSVILLE, PA.—Reports state that the Schuylkill Traction Co. will build a line from Pottsville to Frackville this year, by way of Newcastle and through the Broad Mountain Gap.

READING, PA.—It is announced that the Interstate Rys. Co., which embraces 25 companies, will build all the lines for which charters were taken out a year ago. A great amount of work will be done this year, and several years will be required for completing the system. A power house will be erected on the west bank of the Schuylkill River, and will cost, it is said, about $1,000,000.

WAYNESBORO, PA.—Walton A. McDonald, contractor, of West Chester, who will build the line of the Chambersburg, New Castle & Waynesboro St. Ry. Co., from Greencastle to Pen Mar, via Waynesboro, a distance of 15 miles, has started work, and expects to complete the road by Aug. 1.

COLUMBUS, GA.—The Columbus St. Ry. Co. has been granted a franchise to use the streets of Girard for an electric railway.

CINCINNATI, O.—Local papers state that Wagenhals & Cavanaugh, Boonville, Ind., have been given the contract for the construction of the Dayton & Muncie electric road, between Greenville and Muncie, some 47 miles. Work will start at once.

COLUMBUS, O.—C. F. Galloway, Secy. Columbus, Bellefontaine & Northwestern Electric R. R., informs us that the company is now working on the rights of way. The line will be 60 miles long and will reach Lima, besides touching the towns named. D. E. Sullivan, Columbus, is Pres.

COSHOCTON, O.—The Capitol City Traction Co. has been incorporated with a capital stock of $10,000, and will build an electric railway system at Olympia. J. B. Weddel, Mansfield, is Pres.; J. B. Becket, Cincinnati, Vice-Pres., and E. B. Connor, Coshocton, Secy.

CRESTLINE, O.—Chas. Bumfield, Mansfield, has secured a franchise for an electric line from Mansfield to Galion, passing south of Crestline. It is stated that the line will be built this summer.

MANSFIELD, O.—The Mansfield Ry., Light & Power Co. has been incorporated with a capital stock of $1,000,000. The company will operate an electric road connecting Mansfield and Shelby and sell electricity for commercial purposes. Geo. Koehler, O. N. Littell and F. K. Brocker are interested.

MARIETTA, O.—The organization of the Marietta, Woodsfield & Barnesville Electric Ry. has been completed, according to local papers. The company proposes to build an electric line through the towns named, and now has three routes under consideration; one up the Ohio River and the other two up the Little Muskingum River by different routes. R. Merydith, Marietta, is Pres., and T. M. Ripley, Secy.

TOLEDO, O.—The Detroit, Monroe & Toledo Short Line is ready to commence the expenditure of $1,000,000 for construction work and equipment on the extension of its electric road from Monroe to Detroit. Some contracts have been closed and include one for 100,000 ties to Sterling & Sons, Monroe, and another for 4,000 tons of rails, overhead equipment, rail joints, copper bands, spikes and bolts to the American Steel & Wire Co., Chicago, and the Atlas Rail Joint Co., Chicago. A 66-ft. right of way has been secured for the purpose of double tracking the line when business demands it.

YOUNGSTOWN, O.—The Youngstown & Ohio River Ry. & Electric Light Co. has been granted a franchise by the council of Salem for the use of its streets for an electric line, to run from Lisbon, Salem, Leetonia, Washingtonville, Calla and Canfield to this city.

INDIANAPOLIS, IND.—A franchise has been secured by the promoters of the Indianapolis & Cincinnati electric line in Connellsville, and Sargent & Lundy, electric engineers, of Chicago, are now drawing plans for the power house and electrical equipment. The rights of way are being obtained between this city and Rushville. The company is capitalized at $1,500,000.——The Ohio & Indiana Ry. Co. has been formed by business men of Angola to build an electric road from the state line in Steuben county, a distance of 15 miles. The capital stock is $50,000. Chas. J. Pilliard, Alphonso C. Wood and John J. King, Angola, are incorporators.

ADRIAN, MICH.—The Toledo & Michigan Electric Ry. Co. has recently filed articles of incorporation with a capital stock of $450,000. The company has a private right of way between this city and Coldwater, a distance of 56 miles. It will parallel the Lake Shore. W. P. Heston and W. W. Betz, Toledo, O., and J. W. Helme and R. W. Kirk, Adrian, are incorporators.

HILLSDALE, MICH.—The council has granted a franchise to Peter P. Ducet for an electric road through Hillsdale. The line will run from Adrian to Hillsdale and thence west by way of Jonesville to Coldwater, thence westward.

MOLINE, ILL.—Articles of incorporation have been issued to the Dixon, Rock Falls & Southwestern Electric Ry., which will build a line from Dixon to Moline by way of Rock Falls and Sterling, Prophetstown and Erie. The company is capitalized at $50,000. The cost of the line will amount to about $1,000,000. O. E. Maxson, A. S. Goodell and H. L. Sheldon, Rock Falls, Ill., are incorporators.

VANDALIA, ILL.—W. M. Fogler, Pres. East St. Louis, Vandalia & Eastern Electric Ry., Vandalia, writes that a preliminary survey has been made and that the line will run from East St. Louis to Highland, Vandalia, Effingham, Marshall and Terre Haute, having a total length of 160 miles. W. Brown is Ch. Engr., Toledo, O.

MILWAUKEE, WIS.—The Chicago, Milwaukee & Inland Lakes Traction Co. is said to be a project planned by the Standard Oil Co. The proposed line will run between Milwaukee and Chicago. The company also plans a line from Chicago to Lake Geneva and Janesville, and thence to Milwaukee. The right of way is being purchased. Chas. H. Lambert, Chicago; W. D. Ball, Evanston, and Fred. Mackinon, Oak Park, are incorporators.

MILWAUKEE, WIS.—The Falk Mfg. Co., of this city, plans the construction of an interurban electric railway 33 miles long, connecting Cincinnati, Milford and Loveland.

CALLAWAY, NEB.—The Callaway "Courier" refers to a project to build a trolley line from North Platte to Gandy, and gives the estimated cost of such an undertaking at $75,000. The same publication mentions a prospective electric line from Broen Bow to Sargent, Arnold and Callaway. This line was planned on paper about two years ago by a company known as the Wiggle Creek & Dismal River R. R. Co. Mr. Morrison is the leading spirit in the enterprise.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

OMAHA, NEB.—The Omaha & Council Bluffs Ry. & Bridge Co. has filed amended articles of incorporation increasing its capital stick from $1,500,000 to $3,000,000, and providing for the construction of railways in Douglas county, Neb., and Nebraska, Pottawattomie and Cass counties, Ia., with termini in Omaha, Council Bluffs and Griswold. An officer of the company has recently stated that the construction of the extensions in Douglas county would first be taken up, and that the suburban lines in Iowa will be looked after later, but probably not this year. Chas. T. Stewart is Secy.

SOUTH SIOUX CITY, NEB.—Capt. R. A. Talbot has asked the county commissioners for a franchise for an electric railway from this city to Homer.

PIERRE, S. D.—Articles of incorporation have been filed by the Black Hills & Spearfish Valley Electric Ry. Co., of Spearfish, with a capital stock of $2,500,000, for the purpose of building an electric railway from that place to Belle Fourche, and to Lead and Deadwood.

KANSAS CITY, MO.—Philip Thurmond, Ch. Engr. Missouri Electric R. R., has stated that surveys have been completed and the rights of way secured for the company's road, which will run through Howard, Lynn, Chariton, Boone, Callaway, Montgomery and St. Charles counties. The road was recently incorporated. The Interurban South Side Ry. Co., capitalized at $100,000, has been incorporated to build an electric road from the race track of the Kansas City Jockey club to 47th St. and Flora Ave. The incorporators are members of that club. The route has been laid out and the right of way is being secured. Work will begin within a few days. It is also planned to build a line from the Jockey club's grounds to 48th St. and Cleveland Ave., but nothing will be done until after the first line is completed. John Donnelly is Pres.; Henry G. Pert is Vice-Pres., and L. B. Ridge is Secy.

ST. LOUIS, MO.—A. B. DuPont, Second Vice-Pres. and Gen. Mgr. St. Louis Transit Co., has notified the board of public improvements that his company had placed orders for full power equipped brakes for each of its cars, about 2,000 in number. The brake will be operated by compressed air from a storage tank, and will be of 300 lbs. initial pressure. There will be some 40 charging stations in the city. The outlay for this improvement will reach $500,000.

HARRISON, ARK.—John J. Geghan, one of the incorporators of the Ozark & Sulphur Mountain Traction Co., has stated that the company's road will run from Harrison to Sulphur Springs, on Sulphur Springs Mountain, 12 miles south of this place, thence to Jasper, and from there southwesterly by way of the Little Buffalo River and Partheum and Murray to Clarksville, a total distance of 100 miles. The territory traversed is said to be rich in zinc and lead ores. Harold A. Oerting, Harrison, is engineer for the road.

WACO, TEX.—Col. John L. Spurlin, of Hamilton, states that the people of his city are considering the matter of getting an electric car line to that city.

EL RENO, OKLA.—The council has granted a 50-year franchise to S. T. Roberts and H. R. Canon, El Reno, and John A. Bell and H. H. Corsein, Nashville, Tenn., for the construction and operation of an electric street railway. Work shall commence within nine months and be finished in 27 months.

SPOKANE, WASH.—Local papers state that the Washington Water Power Co. is planning to built about 1½ miles of new street railway this summer. Surveys are now being made.

WHATCOM, WASH.—B. W. Loring and Simon Kildall made application to the council for a franchise for an electric line through the city to connect with a line of Lynden. The applicants state that they are ready to build at once.

LOS ANGELES, CAL.—Henry T. Hazard asks permission to build an electric street railway from First and Evergreen Ave. easterly on First St., to the city limits.

SANTA ANA, CAL.—The council has granted the application of W. S. Collins for an electric street railway over West and Fifth Sts. as a part of proposed Santa Ana and Newport Beach electric road. Mr. Collins has made an application for an electric road between here and Newport.

VISALIA, CAL.—Local papers state that W. C. Anderson, civil engineer, is here surveying the route for the proposed electric railroad contemplated by John H. Hammond and Harold Wheeler. The line will run from this city to Demon Cove.

WEAVERVILLE, CAL.—Reports state that F. J. Hellen proposes building an electric railway from Red Bluff to Tuscan Springs.

MONTREAL, QUE.—It is announced that $100,000 will be spent by the Montreal St. Ry. Co. in improving its lines in the city during the spring and summer.

LIGHT, HEAT AND POWER PLANTS

AUGUSTA, ME.—State grant of $3,100 for the establishing of electric plant in Maine state prison contemplated.

HOULTON, ME.—Albert Burleigh, of the St. John's River Power Co., writes us that the engineer has not yet been engaged nor the cost estimated for the proposed electric plant at Fort Kent.

MALDEN, MASS.—The Malden Electric Co. will, it is said, spend over $100,000 in improving its property.

SPRINGFIELD, MASS.—Local reports state that Engineers F. L. Smith and F. B. Gilligan, New York, N. Y., have begun surveys for a power plant to be erected on the Farmington River in Sandisfield and Tolland. About $500,000 will be expended in developing the power privileges.

PROVIDENCE, R. I.—The contract for erecting the building for the rotary converter station of the Rhode Island Suburban Railway Co. at Warwick has been let to E. K. Watson, of Warren, for about $10,000.

GROTON, CONN.—The charters of the Groton Electric Co. and the Groton Water Co. have been amended so that they can furnish power outside the Second Voting District. The electric company is also given the power of manufacturing gas.

ALBANY, N. Y.—A bill is before the legislature to allow the Bronx Gas & Electric Light Co. to supply gas and electricity to New York city.

FAR ROCKAWAY, N. Y.—The Queens Borough Electric Light & Power Co. has filed plans for a power house to be erected at a cost of $25,000 on Mott Ave. A large machinery plant will be installed.

NEW YORK, N. Y.—Bids are asked by the park board until April 9 for erecting new wing for a new heating, power and electric light plant for American Museum of Natural History. Wm. R. Willcox, Comr.

CUMBERLAND, MD.—L. C. Holden, Arch., 1133 Broadway, New York, N. Y., has been engaged on plans for a brick and steel 2-story power plant to be erected at this place. A full line of power equipment will be installed.

LOUISA, VA.—Electric lights under consideration.

PETERSBURG, VA.—We are informed that plans for raising the dam of the electric plant at Bynum, N. C., owned by J. M. Odell and Capt. W. L. London, have been prepared. Plans were also made for head-gates and canal for utilizing the river to its full capacity. The power to be immediately installed, however, has not been determined. It will probably be 250 HP., or one-fourth of the final power contemplated. Jno. W. Hays, Petersburg, Va., is Des. Engr.

WHEELING, W. VA.—We are informed that no bids were received March 27 for building a power house at Dam No. 6.

ELIZABETH CITY, N. C.—The contract for building the new electric light plant has been let to Elisha Overton.

MT. AIRY, N. C.—Mayor Samuel G. Pace writes us that the engineering work for the light and water plants has not been done. Bids are to be called as soon as the plans and specifications are made out.

BELTON, S. C.—Captain Smythe, of Pelzer Mills, is said to be securing options along Toney Creek for the development of electrical power.

GREER, S. C.—W. M. Ballinger, Secy., writes us that an engineer has not yet been employed for proposed electric plant.

ATLANTA, GA.—The following bids for furnishing electric lights have been received by the city council: One-year term—Georgia Railway & Electric Co., 450 watt arcs, $110; J. F. Lester, 550 watt arcs, $82. Three-year term—Georgia Railway & Electric Co., $82.50; J. F. Lester, $75. Five-year term—Georgia Railway & Electric Co., $79.50; J. F. Lester, $67. The last bidder, J. F. Lester, proposes to build a combined electric lighting and garbage cremation plant if certain concessions are made by the city.

BROOKSVILLE, FLA.—Electric lighting talked of.

HARRODSBURG, KY.—Site for municipal electric light plant is being sought. Hal Grimes is Mayor.

CINCINNATI, O.—Stockholders of the Cincinnati Gas & Electric Co. will vote May 4 on increasing the capital stock by $1,000,000 for paying for improvements and extensions.

CINCINNATI, O.—It is stated that the Cincinnati & Columbus Traction Co., Philip C. Swing, Mgr., will construct a $200,000 power station at Perrington. Four substations, costing $25,000 each, will also be built.

COLUMBUS, O.—Bids are asked until April 13 for constructing municipal electric light plant according to plans of director of public improvements. John A. Connor, Clk. Bd. Pub. Wks.

EAST LIVERPOOL, O.—People's Light & Power Co. has asked for franchise for public and city lighting.

ZANESVILLE, O.—The contract for erecting the power house at foot of Main St. for the Zanesville Street Railway, Light & Power Co. has been let to F. E. Gribben & Co., Cleveland, O.

GREENSBURG, IND.—A. H. Thompson & Co., Chicago, Ill., are said to contemplate building an electric light plant here.

WABASH, IND.—We are informed that the council has not decided as to the engineer to make plans and specifications for the proposed municipal electric light plant.

GRAND RAPIDS, MICH.—Manager Eaton has announced that the Grand Rapids Gas Light Co. will lay about six miles of new mains and will also add ten benches of retorts at the works, besides making many other improvements.

WELLS, MICH.—The Isaac Stephenson Co., of this city, have had plans made for the power plant on the Escanaba River at Chandler Falls. The cost of the dam is estimated at $30,000, and of the complete electric plant and cost of transmission to Wells and Escanaba at $200,000.

HUMESTON, IA.—Jas. L. Humphrey is said to be interested in a project for an electric light plant.

MAPLETON, IA.—John R. Welsh and others have asked franchise for operating a gas plant for light and heat purposes.

ODEBOLT, IA.—Private gas plant proposed.

RIVERTON, IA.—City may vote on $2,500 gas plant.

WEST BEND, IA.—Mayor J. T. Swearingen writes us that nothing definite has been done about the proposed improvement of the municipal light and water plants.

CALEDONIA, MINN.—Walter George, Pres. Council, writes us that $8,000 bonds has been voted for an electric plant to be run in connection with the water-works.

MANKATO, MINN.—Reports state that suit has been commenced against the city to restrain it from building an electric plant and new pumping station and from issuing bonds. The city had voted to issue $40,000 of electric light bonds, and it was stated that bids for building the plant were to be received March 30.

KANSAS CITY, KAN.—Council have been considering the granting of a new franchise to the Consolidated Electric Light & Power Co. for a term of 30 years.

SEWARD, NEB.—City electric plant discussed.

MITCHELL, S. DAK.—Mayor Geo. A. Silsby writes us that they are repealing portion of ordinance giving present plant the exclusive franchise. The city may buy out this plant or may install city plant. Everything, however, is still uncertain.

ABERDEEN, S. DAK.—Chas A. Howard, Pres. Aberdeen Gas Co., which was recently granted a 25-year franchise here, writes us that will not be in the market before June 1.

FORSYTH, MONT.—Franchise for electric light and water plants has been granted to Barney Blum and L. L. Crockett.

LEWISTON, MONT.—J. L. Bright, of the Citizens' Electric Co., is quoted as saying that a $30,000 power plant is about to be put in.

KANSAS CITY, MO.—The Metropolitan Street Railway Co. has taken out a permit for a $300,000 power house at First St. and Grand Ave.

RICH HILL, MO.—City has voted to purchase and to operate plants of Rich Hill Water, Light & Fuel Co.

ST. LOUIS, MO.—The contract for a power house for Terminal Railroad Association at 351 South 18th St., has been let to Geo. A. Fuller & Co., for $60,000.

CALDWELL, TEX.—Wallin & Scott, it is said, will soon put in an electric light system.

DENVER, COLO.—Bids are asked until April 26 for installing electric light and power plant in U. S. Mint Building, as is stated in our advertising columns. R. E. Preston, Acting Director Mint.

NORTH YAKIMA, WASH.—C. P. Wilcox is stated to be interested in a plan for building a $20,000 plant for supplying heat, light and power. C. H. Wright, Seattle, Wash., has been engaged on plans and specifications.

SPOKANE, WASH.—The Washington Water Power Co. is said to contemplate the extension of its line connecting Glendale with Staffords addition.

MEDFORD, ORE.—The cost of putting in a turbine wheel, laying pipe and installing machinery for running the light and water plant from the power of the lower ditch has been estimated at $5,820.

WESTON, ORE.—The obtaining of power for an electric light plant from the Unatilla River is being investigated.

SAN FRANCISCO, CAL.—The Bay Counties Power Co. is stated to be planning to run a tunnel from Dark Canyon to the North Fork, where a power plant will be built.

EUREKA, CAL.—C. E. Lentell, C. E., has been selecting a site for a power plant to be used in generating power for an electric road to be built in Eureka.

HOLLYWOOD, CAL.—Private gas plant talked of.

PASADENA, CAL.—Stockholders of the Consolidated Gas Co. are to vote May 12 on increasing the capital stock $40,000, the proceeds to be used for plant construction.

MIDLAND, ONT.—Reports state that the Ackerman Power & Light Co., Box 331, Midland, wishes tenders for a pair of water wheels, 600 HP., to be operated with 12 ft. water head at Port Severn, with alternator for alternating current, and dynamo for direct current of equal capacity.

NIAGARA FALLS, ONT.—The contract for building the copper dam of the Toronto & Niagara Power Co. has been let to Barry & McMordie, of this city.

TORONTO, ONT.—Bids are asked until May 11 for constructing a tail race tunnel for the Toronto & Niagara Power Co., as is stated in our advertising columns. F. S. Pearson, 29 Broadwey, New York, N. Y., is Engr. Frederick Nichols, Vice-Pres. and Gen. Mgr., Home Life Bldg., Toronto.

BONDS.—Mayville, Mich., by Geo. Fox, Pres., is asking for bids until April 3 for $5,000 electric light plant bonds.——Buhl, Minn., has voted bonds for installing an electric light plant.——Mifflinburg, Pa., has voted bonds for building $10,000 electric light plant.——Johnson City, Tenn., seeks to issue $40,000 of bonds for constructing electric light plant.——Seattle, Wash., is asking for bids until May 9 for $590,000 municipal lighting plant bonds. Jno. Riplinger, Cy. Comptroller.

NEW COMPANIES.—Bassett Heat & Light Co., Bassett, Neb.; $35,000; J. D. Brayton; company has obtained 25-year franchise to furnish gas.——The Transatlantic Gas Co., Camden, N. J.; $1,000,000; J. Albert Odell, Frank A. Stonecipher, Charles Bowman, Pittsburg; will establish plants to manufacture gas by the formula owned by the Gas Apparatus Construction Co., East Liverpool, O.——Seminole Power & Ice Co., Fort Myers, Fla.; $25,000; H. H. Gardner, T. W. Dunk.——Memphis Consolidated Gas & Electric Co., Memphis, Tenn.; $400,000; Wm. P. Martin, T. M. Gunderson; formed to absorb the Equitable Gas Co. and the Memphis Electric Light & Power Co.——Burlington Electric Light & Power Co., Burlington, Wis.; $50,000; J. Smith, C. E. Partee, M. D. Smith.——The Corporate Electric Co., Garden City, N. Y. (L. I.); $300,000; S. Recknagel, Walter L. Worrall, C. C. Freeman, Brooklyn.——People's Illuminating Co., New York, N. Y.; $25,000; C. C. Freeman, H. C. Eldert, Brooklyn; W. L. Worrall, New York.——Tuolumne Electrical Co., San Jose, Cal.; $200,000; R. W. Hersey, C. W. Quilty, P. J. Dunne.

BRIDGES

BIDDEFORD, ME.—The city may replace one-half of the Somesville bridge with iron structure this year.

BOSTON, MASS.—A loan bill before the aldermen contains an item of $56,000 for widening the draws of the Congress St. and Mt. Washington Ave. bridges.

LEE, MASS.—Plans have been made, it is stated, for the proposed filling and bridge work for abolishing Langdon Crossing. The estimated cost is about $30,000.

NORTH ADAMS, MASS.—Plans for the abolishment of grade crossings here are said to include the construction of a viaduct from the south side of city hall over the river south of the railroad bridge. Franklin B. Locke is Cy. Engr.

SALEM, MASS.—Bids are asked until April 10 for building a steel bridge over the B. & M. R. R. tracks at Jefferson Ave. C. H. Danfork, Clk. Bridge Com., City Hall, Salem.

SPRINGFIELD, MASS.—Mace Moulton, Consult. Engr., has been engaged on plans for raising the South End bridge to conform with the grade crossing commission's wishes and the orders of the War Department.

HARTFORD, CONN.—The commissioners of the Connecticut River Bridge and Highway District have completed the organization for the construction of the stone bridge at Hartford by appointing Edwin Dwight Graves Ch. Engr, and retaining A. P. Boller, New York, N. Y., as Consult. Engr., and Edmund M. Wheelwright, Boston, Mass., as Consult. Arch.

NEW HAVEN, CONN.—The U. S. War Department has ordered that a stationary bridge 15 ft. high be put over West River at Kimberly Ave. The bridge will cost, including land damages, about $160,000.

SEYMOUR, CONN.—Town has voted that the selectmen contract for a suitable bridge at junction of Pine and Meadow Sts.

BROOKLYN, N. Y.—Bridge Commissioner Lindenthal has asked the board of estimate for leave to construct new bascule type bridges over Gowanus Canal at Hamilton Ave., Third Ave., and Union St., to cost respectively $140,000, $75,000 and $70,000.

BUFFALO, N. Y.—Bids are asked until April 11 for constructing viaduct complete in Perry St., as stated in our advertising columns. C. M. Morse, Deputy Engr., Comr.

DOLGEVILLE, N. Y.—Contract for a steel bridge over East Canada Creek at Ingham's Mills has been let to Penn Bridge Co., Beaver Falls, Pa., for $3,800.

NEW YORK, N. Y.—The following bids for constructing bridge and abutments over N. Y. & H. R. R. at East 138th St., have been received by Louis F. Haffen, Bronx Borough Pres.: M. J. Leahy, 1176 Boston Road, New York, N. Y., $23,610; King Bridge Co., 120 Liberty St., New York, N. Y., $21,150.

NEW YORK, N. Y.—Bids are asked by the Bridge Commissioner, Park Row Bldg., until April 9 for the construction of the masonry pedestals on top of the tower foundations of the Manhattan Bridge (No. 3) over the East River. Gustav Lindenthal, Comr.

NEW YORK, N. Y.—It is stated that the New York & New Jersey Bridge Co., which recently filed a $60,000,000 mortgage on its franchises, land, etc., did so to acquire money to push forward its proposed bridge over the Hudson River at 59th St. Gen. James S. Clarkson is Pres., and Chas. H. Swan is Secy.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

NEW YORK, N. Y.—The city has accepted the plans for constructing a steel and concrete bridge over East Chester Creek on Pelham Bridge Road. The bridge is to be 1,100 ft. long and 50 ft. wide and will have lift draw in the center. The draw is to be flanked on either side with three arches of steel imbedded in concrete. An appropriation of $330,000 is available for its construction.

RESORT, N. Y.—A bill is before the legislature providing an appropriation of $5,000 for rebuilding the Sodus Bay bridge.

TROY, N. Y.—The Troy & Colonie Bridge Co. is seeking incorporation for the construction of toll bridge over the Hudson, from Hutton St., Troy, to Green Island. The capital stock is $150,000 and Benhart Marks and Wm. V. R. Irving are among the incorporators.

DELAWARE, N. J.—Reports state that plans are being made for a new railroad bridge which the Delaware, Lackawanna & Western R. R. Co. proposes to erect over the Delaware River at this place, at a cost of $100,000.

ELIZABETH, N. J.—County freeholders are to be petitioned for a bridge over the Elizabeth River at First St.

NEWARK, N. J.—County Engineer Owen has made preliminary plans for the reconstruction of the plank road. The chief item of expense, $800,000, will be for bridges.

BRADFORD, PA.—C. L. Douglass has offered to accept $30,000 for his dam provided the city would erect a $5,000 bridge over the Luna on its site.

PHILADELPHIA, PA.—The contract for bridge over the Reading R. R. at 17th and Indiana Ave. has been let to McGaw & Gray, for $76,300.

McKEESPORT, PA.—It is stated that the city, Frank H. Hallam, Cy. Engr., will, in conjunction with the Pittsburg, McKeesport & Connellsville Ry. Co., construct a $20,000 steel viaduct across White St., to replace the present old wooden structure.

MARTINSVILLE, MD.—Bids are asked by the county commissioners until April 6 for constructing bridge over stream on Monrovia Road; also for constructing abutments and grade walls for other bridges.

WASHINGTON, D. C.—The following bids were received March 30 for reconstructing a pier of the aqueduct bridge: Penn Bridge Co., Beaver Falls, Pa., $54,-956; McMullen & McDermott, New York, N. Y., $61,685; Foundation & Construction Co., New York, N. Y., $57,007.

HANOVER, VA.—Reports state that several of the county bridges have been either washed away or wrecked by the recent floods.

GENOA, W. VA.—Plans for a steel bridge over Upper Coal Branch in Wayne county have been prepared. L. F. Thompson, Genoa, W. Va., is Chn. County Comrs.

WHEELING, W. VA.—It is reported that the Norfolk & Western R. R. will rebuild its large iron bridge over the Potomac at Shepherdstown the coming summer.

COLUMBUS, GA.—E. J. Rankin, County Comr., writes us that the commissioners have not yet asked for plans, etc., for the Bull Creek bridge and may delay doing so for some time. When the bridge is built it will be of iron.

AKRON, O.—Reports state that bids are asked by the city commissioners until April 11 for constructing concrete-steel arch bridge over Little Cuyahoga River, at Cuyahoga St. Span of arch is to be 40 ft. and bridge is to be 50 ft. wide. J. W. Payne is Cy. Civil Engr.

CLEVELAND, O.—Bids are asked by the county commissioners until April 18 for construction and completion of masonry arch bridge over Euclid Creek on Euclid Ave. J. C. Dorn, Clk.

COLUMBUS, O.—The county commissioners and officials of the Pennsylvania R. R. have been discussing the construction of a $100,000 viaduct at Reed Ave.

DAYTON, O.—Bids are asked until April 25 for constructing masonry abutments of bridges over Wolf Creek, in Madison township. T. J. Kauffman, county auditor.

DAYTON, O.—Bids are asked until April 25 for constructing 100 ft. long and 16 ft. wide bridge over Wolf Creek. T. J. Kauffman, county auditor.

ANGOLA, IND.—Reports state that all bids received March 20 for seven iron bridges have been rejected, and new bids called until April 8 for seven bridges of wood and iron on concrete. D. A. Douglass, County Auditor.

INDIANAPOLIS, IND.—The Marion county commissioners are asking for bids until April 16 for constructing six new bridges in this county. It is also stated that the county will erect 30 bridges this year. John B. McGregor is Chn. Comrs.

ALLEGAN, MICH.—It is stated that the county commissioners are to again to call for bids for constructing a bridge at Plainwell. The contract, at the previous letting, was awarded to J. G. Troban & Co., Jackson, Mich., for $20,500. The specifications were not properly drawn up, however, hence the need of readvertising.

PONTIAC, MICH.—The contract for a bridge on Pike St. has been let to Thos. J. Kennedy for $2,250. M. D. Heitsch, at $3,253, secured the Water St. bridge contract.

SAGINAW, MICH.—Bids are asked until April 16 for competitive plans for a lift bridge over Saginaw River, as is stated in our advertising columns. R. W. Roberts, Cy. Engr.; M. L. Land, Pres. Bd. Pub. Wks.

CHICAGO, ILL.—The Dearborn St. bridge, according to reports, may be replaced by a bascule bridge at a cost of $210,000.

CHICAGO, ILL.—The Jackson Park Commissioners have let the contract for a stone bridge over the south lagoon to J. P. Webber, for $35,000.

DECATUR, ILL.—The highway commissioners have voted to build a new bridge over Sangamon River at Coulters Mill at a cost of $6,000.

MARION, ILL.—Fire is reported to have destroyed five spans of the Pond Creek bridge, eight miles north of this city.

MOLINE, ILL.—The East Moline & Watertown R. R. will erect a steel viaduct at East Moline over the C., R. I. & P. R. R. tracks.

BRODHEAD, WIS.—A tax levy of $1,500 for a steel bridge over the river is to be voted on.

BURLINGTON, IA.—The Citizens' Bridge Co. proposes to build a combination wagon and railroad bridge over the Mississippi.

CEDAR RAPIDS, IA.—It is stated that the Cedar Rapids, Iowa City & Southern Electric Ry. Co will contract soon for three bridges, one across Cedar River at Cedar Rapids, one across Iowa River at Iowa City, and one across Iowa River at Curtis. The bridges are to be of four 150-ft. spans and four 125-ft. spans.

COUNCIL BLUFFS, IA.—The Chicago & Great Western R. R., according to reports, is to build an overhead bridge at Garfield Ave.

DES MOINES, IA.—It is proposed to construct an $18,-000 viaduct over the tracks of the Keokuck & Western at South 18th St.

DYERSVILLE, IA.—Reports state that the Maquoketa River bridge at this place will be replaced by a single span steel bridge 168 ft. long, to cost about $5,000.

MARSHALLTOWN, IA.—A 1,500-ft. viaduct, to cost $60,000, is proposed for this city.

TIPTON, IA.—Several small bridges may be built this year by the county. W. A. Hannon is county auditor.

WINONA, MINN.—The contract for a steel bridge at Minnesota City has been let to the Biesanz Stone Co., Winona, for $4,407.

LINCOLN, NEB.—Bids are asked until April 21 for erection and repairing of steel bridge over Republican River, south of Bloomington. John Parker, County Clk.

PIERRE, S. DAK.—The Missouri River Bridge Co., at Chamberlain, has filed articles of incorporation for the construction of either a pontoon or stationary bridge across the river at that point.

KANSAS, CITY, MO.—The contract for the Summit St. viaduct superstructure has been let to A. M. Blodgett, 303 New England Bldg., at $40,000. The contract for the steel work was let to the American Bridge Co., 704 Postal Telegraph Bldg., for $80,000.

COLFAX, WASH.—Bids are asked until April 8 for constructing a 50-ft. combination span bridge with wooden piers and 18-ft. roadway over Union Flat Creek. H. W. Wheeler, County Auditor.

TACOMA, WASH.—The council has made an appropriation of $6,900 for repairing bridge No. 8 on E. 34th St.——The contract for constructing the intercounty bridge at Buckley has been let to Mills & Tweeden, Tacoma, Wash., for $4,700.——The county commissioners have agreed to pay their share of building the Puyallup bridge, and the matter will be brought before the council. The cost of the work will be about $22,000.

PORTLAND, ORE.—Residents of Central East Portland are asking for a new steel bridge to replace the present wooden structure at Morrison St.

GUADALOUPE, CAL.—It is stated that if the Midland Pacific R. R. runs its proposed line through this section, a 1,700-ft. bridge will be required to cross the river.

SAN DIEGO, CAL.—A $5,000 issue of bonds for building bridge on B St. may be made.

SANTA BARBARA, CAL.—Among the items of a proposed bond issue is one of $20,000 for bridges.

PHOENIX, ARIZ.—The P. & E. R. R., work on whose line is progressing rapidly, will, it is said, construct a 600-ft. steel bridge over the Gila River at Butte.

WEISER, IDAHO.—Mayor Thos. E. Kelly writes us, under date of March 23, that the date for receiving bids for proposed bridge has not been settled. The bridge is to be of three spans, of steel on concrete foundation and is to cost $30,000.

HAMILTON, ONT.—It is stated that two steel bridges are to be constructed, one at Wellington St. and the other at Sherman Ave. The city's share of the cost is to be $23,000.

PETERSBOROUGH, ONT.—A bridge is to be built at Gannons Narrows, between Harvey and Ennismore. J. R. McNeillie is County Clk.

FREDERICTON, N. B.—Bids are asked until May 18 for building steel superstructure of Oromocto highway bridge in Lincoln. The structure consists of a 97-ft. through fixed truss span and a 215-ft. swing draw span, as is stated in our advertising columns. C. H. La Billois, Ch. Comr.

BUILDINGS.

PORTLAND, ME.—J. Meier, of Meier & Frank Co., writes us that the contemplated annex will be seven to 10 stories high and 75 × 100 ft. Passenger, freight and sidewalk elevators, pneumatic tube system and electric plant will be installed.

FAIRFAX, VT.—Mason & Co. will soon begin work on the $60,000 Bellows Free Academy. The building will be three stories, brick and 68 × 130 ft.

WORCESTER, MASS.—A new $60,000 parochial school, 94½ × 116½ ft., will be built in connection with St. Ann's parish. J. W. Donohue, Arch., Springfield, Mass.

NORWICH, CONN.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until May 6 for the construction of the post office, except heating apparatus and electric wiring, as stated in our advertising columns.

ALBANY, N. Y.—A bill for a new county court house has been introduced by Senator Dowling and Assemblyman Bostwick.

BINGHAMTON, N. Y.—A $500,000 arcade building is contemplated.

BUFFALO, N. Y.—The Adam, Meldrum & Anderson Co. will erect a 10-story annex on Pearl St. This will add 50,000 ft. of floor space.

NEW YORK, N. Y.—Bids are asked by the board of health, 55th St. and Sixth Ave., until April 17, for erecting nurses' home at Riverside Hospital, North Brother Island. E. J. Lederle, Pres.——Reports state that the Empire Bldg., 71 Broadway, will have five stories added.——The Maritime Association's building, 78-80 Broad St., will be reconstructed.——The new Pennsylvania station will be located at 31st and 32d Sts., between Seventh and Eighth Aves., and the train shed from Eighth to Ninth Ave. The waiting room will be 100 × 300 ft. Steel and granite will be the materials used. McKim, Mead & White, Archs., 160 Fifth Ave.

NEW YORK, N. Y.—Plans have been filed by A. Mertin, Arch., 33 Un.on Sq., for a 5-story brick, granite and limestone lofts, 64 × 98 ft., at 212-6 Spring St., for the J. C. Lyons Building & Operating Co., 4 East 42d St., to cost $100,000; by Neville & Bagge, Archs., 217 West 125th St., for a 6-story brick flat, 88 × 87 ft., at 104th St., for W. J. Casey, 1949 Seventh Ave., to cost $150,000; by Smith, Westervelt & Austin, Archs., 7 Wall St., for a 6-story brick hospital, 140 × 61 ft., at 16th St., for the Health Dept., 56th St. and Sixth Ave., to cost $350,000; by C. A. French, Arch., 406 West 42d St., for a 6-story brick factory, 83 × 86 ft., at 149-155 West 24th St., for A. L. Olsen, 157 West 23d St., to cost $50,000; by Bernstein & Bernstein, Archs., 111 Broadway, for a 6-story brick flat, 48 × 75 ft., at Fifth St. and Second Ave., for J. Weinstein, 192 Broadway, to cost $65,000; by F. A. Minuth, Arch., 289 Fourth Ave., for a 10-story brick flat, 51 × 115 ft., at 11th St. and Fifth Ave., for W. E. Fenn, 115 Broadway, to cost $375,000; by Sass & Smallheiser, Archs., 23 Park Row, for a 6-story brick flat, 39 × 84 ft., at 318-320 East Eighth St., and a 6-story brick flat, 40 × 79 ft., at 725-7 East Ninth St., for L. Block, 83 East 113th St., to cost $80,-000; by H. J. Hardenbergh, Arch., 10 West 23d St., for a 6-story brick tenement, 50 × 90 ft., at 311 East 68th St., for E. S. Auchmutz, 61 University Place, to cost $70,000; by J. B. Baker, Arch., 156 Fifth Ave., for a 12-story brick office building, 26 × 98 ft., at 4 West 22d St., for R. Schalk, 20 East 27th St., to cost $125,000; by Neville & Bagge, Archs., 217 West 125th St., for two 6-story brick flats, 50 × 83 ft., at 111th St., for C. M. Silverman, 1433 Madison Ave., to cost $150,000; by Neville & Bagge, Archs., for a 7-story brick warehouse, 50 × 100 ft., at 127-9 West 24th St. for F. C. Zobel, 22 East 21st St., to cost $90,000; by Babb, Cook & Willard, Archs., 3 West 29th St., for a 3 and 4-story brick library, 50 × 75 ft., at 328 East 67th St., for the New York Public Library, 40 Lafayette Place, to cost $70,000; by Robertson & Potter, Archs., 160 Fifth Ave., for a 4-story brick dwelling, 25 × 81 ft., at 13 East 73d St., for Mrs. E. C. Potter, 39 East 28th St., to cost $60,000; by G. F. Pelham, Arch., 503 Fifth Ave., for a 6-story brick flat, 50 × 87 ft., at 105th St., for L. A. Liebeskind, 36 West 115th St., to cost $65,000; by G. F. Pelham, Arch., 503 Fifth Ave., for a 6-story brick flat, 60 × 79 ft., at 33-7 Charles St., and for a 6-story brick flat, 24 × 94 ft., at 160 Mott St., for J. & I. Polstein, 305 East 57th St., to cost $100,000; by J. B. Baker, Arch., 156 Fifth Ave., for a 6-story brick nurses' home, 94 × 102 ft., at 31-37 East 71st St., for the Presbyterian Hospital, to cost $300,000.

NIAGARA FALLS, N. Y.—R. L. Cheney, Albany, writes us that no steps have as yet been taken toward securing plans for the new Y. M. C. A. building.

OXFORD, N. Y.—A $250,000 appropriation may be made for a land grant college at Cornell University. L. E. Brigham, Secy. Leg. Com.

ROCHESTER, N. Y.—The addition to the federal building may cost $100,000.——The erection of an $80,000 public hall, to seat about 3,500 people, is being discussed. G. A. Benton, Pres. Masonic Temple.

WEST POINT, N. Y.—Bids are asked until May 1 for building and plumbing materials, hardware, tools, paints, glass, furnace and range parts and other miscellaneous stores, as stated in our advertising columns. Address Q. M., U. S. M. A.

NEW BRUNSWICK, N. J.—If Assemblyman Jackson's bill, which provides for bonding this city, becomes a law, a $60,000 jail will probably be built.

TRENTON, N. J.—A reformatory for women is being discussed.

CHESTER, PA.—The Pennsylvania Ry. Co. will erect a $100,000 station. Pompeiian brick with Indiana limestone trimmings will be used.

FRANKFORD, PA.—H. C. Shoch received the contract for a 54¼ × 113⅔-ft., 4-story addition to the plant of James Bromley, Adams and Leiper Sts. Stearns & Castor, Archs., Stephen Girard Bldg., Philadelphia.

HARRISBURG, PA.—The Woodbury Granite Co. received the $4,000,000 stone contract for the capitol building.

PITTSBURG, PA.—Andrew Carnegie has donated $1,-550,000 for enlarging the Carnegie library. The sum of $150,000 will also be spent on a library in the East End.

PITTSBURG, PA.—Reports state that the George A. Fuller Co. will receive the contract for erecting Nixon & Zimmerman's $500,000 theatre.

BALTIMORE, MD.—The Kenesan Apartment House Co. will erect an 8-story apartment house, 100 × 200 ft., on Kenesan Ave., at cost of $175,000. T. A. Harding, Pres.——The ordinance appropriating $100,000 for the purchase of ground east of Aisquith St., and erection of Eastern Female High School, will probably be passed.——Plans are being prepared by Worthington & Ahrens, Archs., for a 200 × 200-ft., 8-story warehouse, for the Factory Building Co. It will be fireproof, brick and steel and have about 200,000 sq. ft. of floor space.

WASHINGTON, D. C.—Work will soon start on the new $14,000,000 terminal station for the Baltimore & Ohio and the Pennsylvania Ry. Cos.

MOUNDSVILLE, W. VA.—Bids will soon be asked for constructing an extension to the north cell building of the penitentiary. The sum of $50,000 has been appropriated for same and $10,000 for a new building for the female department. Jefferson Ave. will probably be paved.

NEW CUMBERLAND, W. VA.—The county court house will be rebuilt. M. L. Wells, Cy. Arch.

GREENSBORO, N. C.—Plans and specifications for the enlargement of the government building are nearly completed. Estimated cost is $60,000.

UNION, S. C.—Bids will be received until April 15 for the erection of the First Presbyterian church building. Wheeler & Runge, Archs., Charlotte, N. C.

ATHENS, GA.—L. F. Goodrich, Arch., writes us that the contract for the city hall has been let.

ATLANTA, GA.—Bids are asked by Treas. Dept., Washington, D. C., until April 6, for the sale of a central site for Federal Bldg. A. Taylor, Asst. Secy.

ALBANY, GA.—Lockwood Bros., Archs., Columbus Investment Bldg., Columbus, have submitted plans for the new pressed brick, stone and terra cotta court house, 75 × 95 ft., costing $45,000.

JACKSONVILLE, FLA.—Competitive plans are asked until April 20 for the new library building. J. R. Parrett is Pres.

NEW ORLEANS, LA.—F. B. & W. S. Hull, Jackson, Miss., received the contract from the Opera House Association, for erecting the $33,000 opera house.——The court house at St. Mary Parish will be 110 × 145 ft., fireproof, and cost $110,000. Steam and electricity to be installed.

MEMPHIS, TENN.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until May 4 for the construction, including plumbing, etc., of the custom house, as stated in our advertising columns.

NASHVILLE, TENN.—A new theatre is contemplated being built on the corner of Church and Vine Sts. at cost of $250,000. J. G. Edwards is interested.

DANVILLE, KY.—Work on the new $60,000 building for the State School for the Deaf will start soon.

RICHMOND, KY.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until April 27 instead of April 8, for the completion of the post office, as stated in our advertising columns.

CLEVELAND, O.—F. C. Bate, Arch., New England Bldg., is preparing plans for a 20-story office building, 150 × 200 ft., to cost about $700,000.

COLUMBUS, O.—Plans have been prepared for seven new cottages for the state hospital for epileptics, at cost of $105,000.

COLUMBUS, O.—Plans have been accepted for the new fireproof market house at First and Second Ave., and High St. It will be three stories, 182 × 182 ft., of stone and natural rock and cost about $120,000. Refrigerating and lighting plants and elevators will be installed. H. E. Smith, Arch.

DENNISON, O.—Bids are asked by T. Lanning until April 16 for erecting a 4-story brick business block, 55 × 125 ft.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

TOLEDO, O.—Bids are asked by the supervising architect, Treas. Dept., Washington, D. C., until April 16, for a site for the new post office. Appropriation is $200,000.

TOLEDO, O.—It is stated that bids are asked by Asst. Secy. Taylor of the treasury, for constructing the government building.

XENIA, O.—Bids are asked by the Ohio Soldiers' & Sailors' Orphans' Home until April 9, for erecting and installing hot water heating system, consisting of circulating pumps, condenser, expansion tank, vacuum pumps, oil separator, thermometers, vacuum and pressure gages, radiators, pipe and fittings, and pipe covering. Gen. C. L. Young, Supt. of the Home.

BRAZIL, IND.—A movement is on foot for a $50,000 high school building. Supt. O'Dell is looking after the plans.

EVANSVILLE, IND.—A. C. Rosencranz has given the city a $20,000 site on which to erect a new $40,000 manual training school building.——The St. Joseph Catholic Church proposes to erect a costly edifice. Bishop Chatard, Indianapolis, has charge of the matter.

ELKHART, IND.—The Elks Lodge is having plans prepared for a business building and lodge hall. Address Secretary.

FRANKLIN, IND.—The Franklin College board has accepted plans, prepared by Harris & Shopell, Archs., Evansville, for a new brick and stone library building. Bids will be asked soon.

INDIANAPOLIS, IND.—The Vancamp Hardware Co. will erect a large building on corner of Maryland and Missouri Sts., at cost of $200,000. Contract will be let this summer.——The plans for the terminal passenger station at Ohio and Illinois Sts., to be erected by the Indianapolis Traction & Terminal Co., have been completed. D. H. Burnham, Arch., Chicago, Ill.

MUNCIE, IND.—H. P. March is having plans prepared for a hotel in the center of the city.

WHITING, IND.—The Standard Oil Co. will spend $3,000,000 on the enlargement of its refinery and erecting new buildings. Plans have been prepared and bids will be advertised for.

WINONA, IND.—J. A. Schumacker & Co., Indianapolis, has received the contract for building the $60,000 3-story pressed-brick Mount Memorial Hall, agricultural and technical school building.

DETROIT, MICH.—The city hall may be remodeled at cost of $400,000. In case the voters reject the first proposition, the sum of $171,000 will be asked to carry out new plans. The plans call for new elevators, new heating system and a new roof.

CERROGORDO, ILL.—The county board of supervisors endorsed the building committee's action and selected the plans of J. W. Royer, Champaign, for the $75,000 brick, stone and terra cotta 3-story court house, which will be 80 × 94 ft.

OLNEY, ILL.—Bids are asked until April 15 for erecting a new library building. J. W. Gaddis, Arch., Vincennes, Ind.

BRITT, IA.—The sum of $40,000 has been raised for a court house.

FORT SNELLING, MINN.—Bids are asked until April 8 for constructing officers' quarters, double lieutenants' quarters, artillery stable, gun shed, etc. G. E. Bond, C. Q. M.

CHANUTE, KAN.—Bids are asked by F. Hetrick until April 6 for erecting a 3-story opera house, 60 × 135 ft. Garstang & Rea, Archs., 204 Grome Bldg., Joplin, Mo.

GREAT BEND, KAN.—Bids are asked by the commissioners until April 21 for erecting a jail and sheriff's residence. J. C. Holland, Archs., Topeka, Kan.

OMAHA, NEB.—Mayor Moores has recommended new fire engine houses at cost of $94,500.

LEWISTOWN, MONT.—Bids will soon be asked by E. D. Beatty, Great Falls, for constructing a post office building.

BRITTON, S. D.—Bids are asked by the board of education until April 6 for erecting a school house. Bids for heating must be separate. G. L. Baker, Clk.; F. D. Orff, Arch., 615 Lumber Exchange, Minneapolis, Minn.

HEBER, ARK.—Chas. L. Thompson, Arch., Little Rock, will prepare plans for the new $75,000 court house.

LITTLE ROCK, ARK.—A new state house is being discussed.

SEATTLE, WASH.—It is stated that Cutter & Malmgren, Archs., Exchange Bldg., are preparing plans for the new Rainier Club building, which will cost $50,000.——New buildings will be erected at Fort Lawton at cost of $80,000. Bids will be called for soon.

TACOMA, WASH.—Reports state that the contract for the Snell Block has been let to the F. H. Goss Construction Co. for $50,000. There will be a 3-story store building, 110 × 120 ft., with boiler room and heating apparatus. Russell & Heath, Archs.

LOS ANGELES, CAL.—The Los Angeles Market Co. will erect a $50,000 building at Central and Third Ave. Plans have been prepared.

MERCED, CAL.—Bids are asked until April 14 for constructing the new county hospital.

OAKLAND, CAL.—Plans are being prepared for the Hearst Memorial Mining Bldg. The building will be equipped with all the necessary machinery and furnaces.——The Bacon Loan & Land Co. will erect a $300,000 building on Washington St.——The Southern Pacific Ry. will probably erect a roundhouse.

SAN DIEGO, CAL.—Hebbard & Gill, Archs., are preparing preliminary plans for a hotel on the site of the Horton House. Estimated cost is $400,000 to $500,000.

SACRAMENTO, CAL.—The sum of $250,000 has been appropriated for a new building at the state university.

PRESCOTT, ARIZ.—Bids are asked until April 25 for erecting barracks, officers' quarters, storehouse, stable and guardhouse, at Whipple Barracks. C. C. Walcutt, Construct. Q. M.

VANCOUVER, B. C.—Competitive plans will be asked for constructing an extension to the Vancouver General Hospital. Cost not to exceed $80,000.

MONTREAL, QUE.—The Montreal Technical Institute contemplate the erection of two 60 x 150-ft. buildings, costing $60,000 apiece. A site has not as yet been located. D. Bovey, Member of Com.

OTTAWA, ONT.—The time for opening bids for repairing By-Ward Market has been extended to April 4. S. Rosenthal, Chn. Property Com.

BONDS.—Omaha, Neb., may issue $100,000 in bonds to cover engine-house construction.——Chattanooga, Tenn., is discussing the advisability of issuing $100,000 for schools and sewers.——The sum of $410,000 will probably be issued in bonds for the new borough building by Long Island City, N. Y.——A bond election will be held in April by Kansas City, Kan., to vote upon issuing $150,000 school bonds.——The Claremont Country Club, Oakland, Cal., will issue $100,000 in bonds for purchasing site and erecting a club house.——Waco, Tex., will hold a bond election April 7 to determine whether $60,000 in school bonds will be issued.

WATER SUPPLY AND IRRIGATION.

BRUNSWICK, ME.—Town has been authorized to raise money for locating water supply.

AUGUSTA, ME.—The Augusta Water District, formed of Augusta and portions of the towns of Chelsea, China and Vassalboro, propose to take their supply from China Lake, 14 miles away from this city.

DEXTER, ME.—Arthur P. Abbott is one of the commissioners of the proposed new water-works, to be constructed at a cost of $48,000.

GARDINER, ME.—Municipal works voted for.

HOULTON, ME.—Town has voted to construct new works and to repair and improve the present works of Houlton Water Co.

LISBON, ME.—Water supply projected.

KEENE, N. H.—Paul F. Burbridge, Supt. W.-W., writes us that the proposed extension to the city water-works will be done by the department. The extension will consist of about 3,300 ft. 8-in. and 2,000 ft. 6-in. pipe.

GREENVILLE, N. H.—Town may establish works.

BROOKLINE, MASS.—Town voted March 31 on an appropriation of $74,000 for a covered reservoir on Fisher Hill.

FALMOUTH, MASS.—Bids are asked until April 10 for laying c.-i. water pipes, setting hydrants, gates, gate boxes, etc., for 3½ miles extension of water mains, as stated in our advertising columns. Louis E. Hawes, Engr., 101 Tremont St., Boston, Mass.

LAWRENCE, MASS.—M. F. Collins, Supt. W.-W., writes us that Morris Knowles, Pittsburg, Pa., has been engaged to prepare plans and specifications and to supervise construction of filter. The proposed site of filter was to be visited by the council March 31.

MALDEN, MASS.—The common council has appropriated $25,000 for water system extension.

MERRIMAC, MASS.—A special committee will report on the matter of works.

NATICK, MASS.—Town has voted $15,000 for enlarging and completing new water supply.

PLYMOUTH, MASS.—An appropriation of $5,000 has been made to lay a 10-in. water pipe through Summit St.

SHARON, MASS.—Committee, of which D. W. Pettee is a member, has been appointed to consider the matter of additional water supply.

WOBURN, MASS.—Water Commissioner Preston favors the introduction of the meter system here at an early date.

GROTON, CONN.—Bill has been passed to permit Groton Water Co. to furnish water outside the Second Voting District. The company can also increase its capital stock by $50,000.

HARTFORD, CONN.—In a report on the future water supply of this city Allen Hazen, Cons. Engr., New York, N. Y., has recommended the construction of filter plant of 5,000,000 gallons normal capacity for purifying the Connecticut River water and a pumping station for forcing the supply through the city mains. The estimated cost of the work is $300,000.

MERIDAN, CONN.—The erection of a spillway for the Hallmere reservoir at a cost of $5,000 is contemplated. John M. Kinder is Supt. W.-W.

NOROTON, CONN.—The Noroton Water Co. has been given leave to extend their business to adjacent places.

SOUTHINGTON, CONN.—It is stated that the Southington Water Co. may extend its water mains to Milldale this spring. T. H. McKenzie is Mgr.

ALEXANDRIA BAY, N. Y.—H. A. Cornwall writes us that it has been voted to bond the village for water-works and sewerage.

BATAVIA, N. Y.—The Horseshoe Lake Improvement Co., which proposes to furnish this city with water, will, it is said, get its supply from springs several miles distant. It is proposed to erect a stand-pipe in the city and to pump the water to it. A series of reservoirs will also be built.

NEW YORK, N. Y.—The board of estimate have adopted a request of R. C. Monroe, Comr. Water Supply, Gas and Electricity, for $120,000 for purchasing and installing water meters.

PLATTSBURG, N. Y.—Plans have been approved for the improvement of the municipal water system. They provide for laying 13,075 ft. of new water mains and the placing of 30 new hydrants, at an estimated cost of $20,000.

WATERTOWN, N. Y.—C. O. McComb, Cy. Engr., writes us that the city has voted to build a mechanical filtration plant to cost $100,000.

CAMDEN, N. J.—The contract for moving the Blake pump from the Pavonia station to Morris station has been let to Wm. H. Boardman for $11,896.

PHILADELPHIA, PA.—The following bids were received for constructing sand washers for the Upper Roxborough filtration plant: Daniel J. McNichol, $7,600; Patrick Gormley, $5,500; Hollingsworth Morris, $4,898; E. M. Nichol, $3,849.

STEWARTSTOWN, PA.—Works to cost $15,000 are contemplated.

NANTICOKE, PA.—It is stated that the Nanticoke Water Co. will soon commence work on a dam on Pike's Creek to furnish a supply for this city. The dam will have a capacity of 500,000,000 gallons.

WILMINGTON, DEL.—Lewis K. Davis, 113 Monument Pl., Indianapolis, has been engaged to make plans for the proposed new Porter reservoir.

SALISBURY, MD.—It is stated that the Salisbury Water Co., Dr. L. S. Bell, Mgr., is to make extensive improvements to its plant, among which will be the erection of extra pumping station and the sinking of an independent system of wells.

LYNCHBURG, VA.—Wm. V. Wilson, Jr., Chn. Water Com., writes us that the city is endeavoring to find out the cost of a proposed gravity system of water supply. Hydraulic engineers are now at work on the problem, but no accurate information can be given out until they report.

WILLIAMSBURG, VA.—Mayor Jno. L. Mercer writes us that a bill is now pending before the legislature for a $30,000 bond issue for establishing works. Should the city vote favorably to the bond issue an engineer will be secured. The committee having charge of the matter have recommended that Chas. S. York, C. E., Baltimore, Md., be secured for the engineering work. The proposed source of the supply is from deep wells. Population, 2,200.

GULFPORT, MISS.—The building of works and sewerage is under consideration. J. T. Ballenger, Mayor.

CROWLEY, LA.—We are informed that the city will ask for bids for about 50,000 ft. 6-in. cast-iron pipe, valves, tees, crosses, etc., on the proposed extension of the city works. Armas Durio, Supt. W.-W.

NEW ORLEANS, LA.—The Union Irrigation & Rice Co. will, it is said, soon be ready to call for bids for constructing its irrigation system. The head of the canal is to be at Washington, St. Landry Parish, and the main canal will be about 20 miles long and 350 ft. wide. About 180 miles of branch canals will also be built.——The report of the sewer and water board shows that the board has $11,384,614 available for a water system and sewers. This sum is divided as follows: Sewers to be constructed, $4,475,300; water-works to be constructed, $4,457,400; connections to both systems, $1,517,900; balance for contingencies and the acquirement of the present water-works plant of $1,133,644.

NEWPORT, KY.—W. L. Glazier writes us that J. T. Earl & Co., Latonia, Ky., intend to put in a water system for Central Covington and Latonia. The supply is to be obtained from Newport by a 10-in. main, which will cross under the Licking River. J. T. Weaver, Ludlow, Ky., is Engr.

BELLAIRE, O.—Council has been discussing plans for works, one of which provided for a new reservoir of 60,000,000 gallons capacity on Jordan's Run. The other plan provided for a loop system of mains and the construction of a new 7,000,000-gallon reservoir. The estimated cost is $150,000.

SANDUSKY, O.—Local reports state that matter of a pure water supply is likely to be taken up.

STEUBENVILLE, O.—New reservoir may be built and water mains extended at a cost of $75,000.

TIFFIN, O.—Reports state that Tiffin water supply has been pronounced unfit for domestic use.

YOUNGSTOWN, O.—The Pittsburg Filter Co. has offered to install a 10,000,000-gallon filtration plant for $75,000. F. M. Lillie is Cy. Engr.

JEFFERSONVILLE, IND.—The Jeffersonville Water Supply Co., D. M. Allen, Supt., is stated to have offered to extend its mains for ten miles provided this city pay $12,000, which, it is claimed, is owed to the company.

OAKLAND CITY, IND.—Reports state that bids are asked until April 20 for works to cost about $35,000. A. H. Kennedy, Rockport, Ind., is Engr.

FLINT, MICH.—City may purchase local company's works and operate them as a municipal plant. The private corporation asks $265,000 for their property.

GRAND RAPIDS, MICH.—The city engineer has estimated the cost of needed improvements to the works at $171,000. These consist of new mains, stand-pipe and extension. It is proposed to issue a $150,000 bond issue.

HOUGHTON, MICH.—Improvement of village works under consideration. W. F. Miller is Pres.

ALTON, ILL.—T. A. Taylor, Receiver Alton Water-Works Co., is asking that he be authorized to make desired extensions of water mains in Alton and Upper Alton.

PROPHETSTOWN, ILL.—Chas. P. Chase, Cy. Engr., Clinton, Ia., has made plans for works for this place, the estimated cost of which is $27,000. The plans call for four miles of mains, pumping station and 65,000-gallon stand-pipe.

DODGEVILLE, WIS.—Henry Halverson, Cy. Clk., writes us that the question of improving the city works at a cost of $5,000 to $9,000 will be voted on April 7.

LAKE WILSON, MINN.—We are informed that nothing further than voting bonds has been done toward the proposed water-works. Martin Forrest, Recorder.

MINNEAPOLIS, MINN.—Bids are to be called until April 24 for the following water-works supplies: 30-in. riveted steel pipe, 8,124 ft.; 30-in. c.-i. pipe, 8,124 ft.; 24-in. c.-i. pipe, 18,120 ft.; 16-in. c.-i. pipe, 2,892 ft.; 12-in. c.i. pipe, 3,276 ft.; 8-in. c.-i. pipe, 5,700 ft.; 6-in. c.-i. pipe, 51,000 ft.; special castings, 183 tons; pig lead, 97 tons; hydrants, 149; valves, 192; first jackets for hydrants, 200. Andrew Rinker, Cy. Engr.; L. A. Lediard, Cy. Clk.

MONTEVIDEO, MINN.—$15,000 works proposed.

YUTAN, NEB.—Frank Roebling is on a committee for the proposed works.

CHEYENNE, WYO.—Bids are asked until May 2 for sinking at least two and not more than six tubular deep wells at Fort D. A. Russell, as is stated in our advertising columns. Capt. W. S. Scott, Constructing Q. M.

SARATOGA, WYO.—R. W. Dyer, Town Clk., writes us that no plans or estimates for proposed new city plant have been made. The source of the supply is the Platte River, and other reports state that bids were asked until March 3 for disposing of $20,000 issue of water bonds. Population, 700.

HELENA, MONT.—Mayor F. J. Edwards writes us, under date of March 24, that it is probable that definite plans for the city water-works will be made known within 30 days. The city has recently issued $614,000 for constructing new works and the injunction which has prevented it from so doing has just been dissolved by higher court.

KANSAS CITY, MO.—The Kansas City Jockey Club has secured a franchise to lay 10,000 ft. of 6-in. water mains and 1,000 ft. of 4-in. so as to supply city water at its race track. John Donnelly is Pres.

ST. LOUIS, MO.—Plans for altering the settling basins at Chain of Rocks have been prepared. They provide for the building of weirs in the walls of the basin, and the estimated cost of the work is $110,000. Edw. Flad is Water Comr.

ST. LOUIS, MO.—Contracts for extending the water works have been let as follows: 4,525 tons water pipe, U. S. Cast Iron Pipe & Foundry Co., 217 La Salle St., Chicago, Ill., $46,031; 450 tons special castings, Magnetic Foundry Co., St. Louis, Mo., $26,055; 192 stop valves, Michigan Brass and Iron Works, Pittsburg, Pa., $9,536.30; 400 fire plugs, Pluger & Henger Manufacturing Co., $9,210; laying water pipes, north of Market St., John O'Donnell, $27,308; south of Market St., Patrick O'Donnell, $25,965.

SHELBINA, MO.—Mayor Geo. W. Humphrey writes us that nothing has been done as yet toward putting in water-works except to get an estimate of cost of Geo. C. Morgan & Co. It is not likely that the plant will be put in this spring.

WINDSOR, MO.—Burns & McDonnell, Postal Telegraph Bldg., Kansas City, Mo., are said to be engineers for the proposed $23,000 city water-works and electric light plant. C. F. Davis is Mayor. Bonds may be issued for the work.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

MARIANARA, ARK.—Legislature has passed bill authorizing completion of works at this place.

MARSHALL, TEX.—Reports state that bids are being readvertised until April 14 for a steel water tower. T. Howard Barnes, Jacksonville, Tex., is Engr., and T. B. Seabury is Secy.

HOUSTON, TEX.—Maxcy & Anderson, Engrs., Binz Bldg., have been employed by G. Bedell Moore and associates of San Antonio, Tex., to prepare plans and specifications for the development of a complete irrigation scheme on the Rio Grande, including pumping plant, and the development of the San Felipe Springs at Del Rio, Texas. The probable cost is $250,000.

WHARTON, TEX.—Works considered.

COLORADO SPRINGS, COLO.—The contract for constructing the new High Line Reservoir has been let to Ord & Swope, for $13,165.

EVERETT, WASH.—The Everett Improvement Co. has been ordered to install 51 new 6-in. hydrants.

SEATTLE, WASH.—Bell & Price, at $12,680, were the lowest bidders for water main in First Ave.

ASHLAND, ORE.—Surveys are being made and work will be commenced soon on proposed irrigation ditch. Geo. W. Rever is Gen. Mgr.

ASHLAND, ORE.—Contract for supplying pipe for upper water system has been let to Provost Bros. for $5,974.

COLUSA, CAL.—Wise T. Dejarnett has filed a water location appropriating 1,000 cu. ft. of water and proposes to construct a 30-ft. wide irrigation ditch.

SAN DIEGO, CAL.—The council has passed resolutions for the improvement of the water-works at a cost of $199,000. Jos. A. Flint, Supt. W.-W.

SAN MATEO, CAL.—Bids are asked until April 6 for furnishing 530 ft. c.-i. 7 × 12-in. conduit pipe. R. H. Jury, Cy. Clk.

SANTA BARBARA, CAL.—E. S. Sheffield, Pres. W.-W. Com., writes us that council has passed a resolution to submit to vote a proposition to issue $200,000 of bonds for extending the city works. The source of the new supply is the Santa Yuba Valley, and it is proposed to excavate a 15,000-ft. tunnel. J. B. Lippincott, 406 Byrne Bldg., Los Angeles, Cal., is Des. Engr.

WOODLAND, CAL.—The Yolo County Consolidated Water Co. has let a contract to Bell & Snider for constructing a system of irrigation canals.

OGDEN, UTAH.—City may vote on works.

PROVO, UTAH.—Estimates of cost are to be made of obtaining water supply from Provo Canyon.

SALT LAKE CITY, UTAH.—Preliminary surveys have been under way for the new storage reservoir at City Creek Canyon. The reservoir will cost about $40,000 and will have a capacity of 5,000,000 gallons. L. C. Kelsey is Cy. Engr.

SHEDIAC, N. B.—The city is said to be considering the establishment of works at a cost of $30,000.

PORT ARTHUR, ONT.—Ratepayers may vote on by-law to appropriate $91,000 for installing water-works pumping system. James McTeigue is Cy. Clk.

STRATFORD, ONT.—Town has voted to purchase works for $98,000 and to spend $8,000 on street improvements. R. R. Lang is Cy. Clk.

CHILLIWACK, B. C.—L. W. Paisley is a member of a committee to report on the installation of municipal works.

ROSSLAND, B. C.—H. B. Smith, C. E., is stated to have formed a company to install works to cost $100,000.

VICTORIA, B. C.—Reports state that bids are asked until April 6 for supplying 350 ⅝-in. water meters. Wm. W. Northcott is Purchasing Agt.

BONDS.—Stewartstown, Pa., may issue $15,000 of bonds for water-works construction.——Nashville, Tenn., seeks leave to issue $250,000 of water filtration bonds.——Vermillion, O., voted April 6 on $35,000 water-works construction bonds.——Flint, Mich., may issue $265,000 bonds for purchase of local works.——Saginaw, Mich., by Frank M. Totten, Cy. Comptroller, will receive bids until April 15 for $10,000 water bonds.——Grand Rapids, Mich., is considering issue of $100,000 of water main extension bonds.——Dogeville, Ia., votes April 7 on water-works improvement bonds. Henry Halverson, Cy. Clk.——Lake Wilson, Minn., has voted $7,000 water bonds. See item elsewhere under this head. Martin Forrest, Recorder.——Nashwauk, Minn., has voted to issue $25,000 water-works construction bonds.——Topeka, Kans., will vote on $620,000 bond issue for purchasing works.——Yutan, Neb., may vote on bond issue for works.——Havre, Mont., votes April 6 on bonds for building works.——Windsor, Mo., will vote on $23,000 bonds for water-works and electric light plant. C. F. Davis is Mayor. See item elsewhere under this head.——Antioch, Cal., was to vote March 28 on $32,000 bonds for water-works construction. R. H. Wall is Town Clk.——Modesto, Cal., secretary local irrigation district will receive bids until April 7 for $149,000 irrigation bonds.——Santa Barbara, Cal., votes April 24 on $200,000 bond issue for water-works extension. See item elsewhere under this column.——Steubenville, O., votes on issue of $75,000 of bonds for new reservoir and extension of water mains.——Cle Elum, Wash., proposes to issue $10,000 bonds for installing gravity water system.

NEW COMPANIES.—Village Water Co., Simsbury, Conn., is seeking incorporation.——Naugatuck Valley Co., Naugatuck, Conn.; C. P. Goss, D. S. Plume, Waterbury, Conn.——Marble Falls Water & Power Co., Marble Falls, Tex.; $20,000; M. H. Reed, B. Badger, A. R. Johnson, Jr.——The Hinkle Ditch Co., Pendleton, Ore.; $5,000; J. T. Hinkle, H. S. Garfield.——Ocean Park Water Co., Ocean Park, Cal.; $50,000; E. J. Vawter,

SEWERAGE.

BAR HARBOR, ME.—E. I. Lord, Des. Engr., writes us that bids will probably be asked about Sept. 1st for constructing 1,925 ft. of 10-in. pipe sewer, costing about $8,350.

CLAREMONT, N. H.—A sewer system will be constructed this year. J. L. Rice, Supt. Water Wks.

BROCKTON, MASS.—The contemplated sewer for Intervale Park will cost between $10,000 and $15,000.

EASTHAMPTON, MASS.—A sewerage pumping plant is being discussed.

GLOUCESTER, MASS.—The main sewer will be built of brick, 24-40 ins. in diameter and branch sewers 6-18 ins. E. W. Bowditch, Civil Engr., Boston, prepared the plans.

LEOMINSTER, MASS.—The sewage disposal committee has discussed the plans prepared by J. W. Gates, Engr.

LAWRENCE, MASS.—An appropriation of $18,000 has been recommended for sewer in Oxford St.

WAKEFIELD, MASS.—A trunk sewer is being discussed.

PLYMOUTH, MASS.—Bids are asked until April 4 for constructing a sewer system. B. F. Ward, Clk. of Selectmen.

WORCESTER, MASS.—Supt. Eddy of the sewer department has stated that to do all the work it would cost several hundred thousand dollars.

HARTFORD, CONN.—The Franklin Ave. sewer system will cost about $80,000.

NEW HAVEN, CONN.—Bids are asked until April 8 for constructing sewers in Woodland, Pine, Fillmore and Lombard Sts. C. W. Kelly, Cy. Engr.

AMSTERDAM, N. Y.—Bids are asked until April 15 for constructing 550 ft. of 27 and 18-in. sewers on East Main St., average cut 11 ft. in rock, and 1,000 ft. of 15 and 8-in. sewers, average cut 8 ft. in rock, as stated in our advertising columns.

CANAJOHARIE, N. Y.—Bids are asked by board of trustees until April 8 for constructing sewers.

JOHNSTOWN, N. Y.—J. W. Miller, Des. Engr., writes us that the East Main St. sewers will be let this season. Plans have been prepared for 10,000 sq. yds. of paving on William St.

JERSEY CITY, N. J.—The sum of $150,000 will probably be spent on constructing sewers.

PLAINFIELD, N. J.—Opposition from the property owners has been met with in regard to extending the sewer system.

BETHLEHEM, PA.—System being discussed.

ENSLEY, ALA.—Alber & Bryne, Consult. Engrs., Birmingham, Ala., write us that plans are being prepared for sewer system to cost $75,000.

CULPEPER, Va.—Bids are asked by the sewer committee until April 7 for constructing a sewer system. R. F. Booton, Chn. C. F. Brown, Engr.

ROANOKE, VA.—Bids are asked by the council until April 4 for furnishing and laying 1,000 ft. of 15-in. terra cotta sewer pipe in Gilmer Ave. J. H. Wingate, Cy. Engr.; W. E. Thomas, Clk. of Council.

NEW ORLEANS, LA.—The sewerage and water board, F. S. Shields, Secy., and Geo. G. Earl, Gen. Supt., has recommended the following bids for acceptance for work on the proposed sewerage system: Dowdle & Windette, Hennen Bldg., contract A, at $390,749; Thos. J. Shea, Quincy, Ill., contracts B, C and F, at $264,087, $360,865 and $120,157, respectively; Irwin Bros., Greenville, O., contracts E and G, at $101,437 and $178,119, respectively. The complete list of itemized bids for this work were given in detail in our issue of March 12.

LOUISVILLE, KY.—Mayor Grainger has recommended an appropriation of $3,000,000 for improving the sewer system. A mass meeting will be held to determine the will of the citizens.

COLUMBUS, O.—Plans are being prepared by the Engineering Dept. for a $20,000 station in Mound St. for the dumpage of east side sewage. Also one in Main St.——The resolution providing for the construction of Russell Ave. relief sewer has passed the council.

SANDUSKY, O.—Bids are asked until April 9 for constructing sewers and furnishing necessary manholes, catch basins, etc. A. M. Wagner, Cy. Clk.

TOLEDO, O.—Bids are asked until April 13 for constructing 8-24-in. cylindrical brick sewers in various streets and alleys. C. H. Nauts, Cy. Clk.

YOUNGSTOWN, O.—A sewer will be constructed on Myrtle Ave. W. I. Davies is Clk.

MARION, IND.—Several small sewers have been ordered.

CHICAGO, ILL.—The council has appropriated $2,333,280 for constructing intercepting sewer and the Lawrence Ave. station.

MAYWOOD, ILL.—Bids are asked by the board of local improvements until April 10 for constructing the South 15th St. sewer system. R. E. Williams, Engr., Room 711, La Salle St., Chicago. C. Manch is Pres. Bd. Improvements.

MOLINE, ILL.—A sewer to empty into Sugar Hollow sewer is being discussed.

ST. PAUL, MINN.—The city engineer's estimate of the cost of Wabasha St. sewer is $18,976.——C. Johnson received contract for Oxford St. sewer for $8,973. Other small sewer contracts were awarded.

ABERDEEN, S. D.—A mile and a half of 10 and 15-in. sewer and improvement of the pumping station has been ordered at cost of $25,000 to $30,000.

CHEYENNE, WYO.—Bids are asked until May 1 for furnishing about 1,850 ft. of 6-in. sewer at Fort D. A. Russell. Capt. W. S. Scott, Construct. Q. M.

GREAT FALLS, MONT.—A storm-water sewer will probably be constructed on Second St., at cost of $7,000.

ST. LOUIS, MO.—E. A. Herman, Sewer Comr., writes us that the Blackstone sewer will be of brick, 12½ × 15 ft., with cut of 22 ft. and cost $120,000. The joint district sewer will be of brick, 6 ft. in diameter, with 20-ft. cut, and cost $55,000; also a pipe sewer 12 to 24-in. with cut of 16 ft., and costing $200,000. Contracts will be let about the end of April.

HOUSTON, TEX.—F. L. Donnany, Cy. Engr., has nearly completed plans for sewer system.

SEATTLE, WASH.—Stirrat & Goetz received the Lake Dell sewer contract for $19,450.——The council has directed the board public works to prepare estimates for sewers in a number of streets.

TACOMA, WASH.—A resolution for sanitary sewers in district No. 35 has passed the council. S. P. Buckmaster, Clk. Comr. Pub. Wks.

PENDLETON, ORE.—F. B. Clontin, Chn., writes us that G. A. Mills, Des. Engr., will draw plans for sewer system.

EUREKA, CAL.—It is stated that resolutions have been adopted ordering the construction of 6-in. iron pipe sewer in Grove St., and 24-in. in Cedar St.; also a concrete culvert in Cedar St.

FRESNO, CAL.—City Engineer Tellman is preparing estimates of the cost of a disposal plant and an intercepting sewer. Roughly speaking the cost is about $38,000.

PASADENA, CAL.—S. J. Edwards received the contracts for Lake and Hudson Ave. sewers, for $11,775 and $8,808, respectively.

STOCKTON, CAL.—The board of public works is said to have recommended rain-water sewers on certain streets at cost not to exceed $6,500.

ELDREDGE, CAL.—A $4,000 system will be constructed at the Home for Feeble Minded Children.

SACRAMENTO, CAL.—The sum of $8,000 has been appropriated for sewer system and repairs to plumbing at Agnews State Hospital.

SAN FRANCISCO, CAL.—Williams, Belser & Co. submitted the lowest bid for the Harrison St. sewer at $4,300.

WOODSTOCK, ONT.—System being discussed.

BONDS.—Prescott, Ariz., will hold an election April 7 to vote upon an issue of $100,000 for waterworks and extending sewer system.——Bids are asked by Los Angeles, Cal., for the purchase of $1,000,000 sewer bonds.——An election will soon be held by Fresno, Cal., to decide upon an issue of bonds for septic tank and sewer.——On April 13 Baker City, Ore., will vote upon proposition to issue sewer bonds.——Mayor Moore has recommended a $100,000 issue for sewerage and paving.——Columbus, O., will issue $50,000 for constructing addition to North Side distributing system.——Atlanta, Ga., will issue bonds.——Authority may be asked by Wakefield, Mass., to issue $180,000.——Dyersburg, Tenn., held a bond election March 18 to decide upon issuing $25,000.——San Francisco, Cal., may issue sewer bonds.

GARBAGE DISPOSAL—STREET CLEANING

BUFFALO, N. Y.—Bids are to be called soon for the collection and disposal of city garbage. Chas. F. Susdorf is Cy. Clk.

CHESTER, PA.—Bids are asked until April 6 for the removal and disposal of garbage, dead animals, etc., during the fiscal year of 1903. M. S. Hatton, Chn. St. Com.

SCRANTON, PA.—The Austin Mfg. Co., Park Row Bldg., New York, N. Y., has secured a contract for street sweepers and sprinklers for this city. The contract price was $522.

WASHINGTON, D. C.—Bids are asked by the district commissioners until May 1 for cleaning streets, alleys and avenues of this city, as stated in our advertising columns.

EVANSVILLE, IND.—The contract for street sprinkling has been let to Hollerbach & May. They agree to sprinkle 10,000 sq. ft. four times a day for $29.45.

LA CROSSE, WIS.—Bids are asked by the board of public works until April 15 for furnishing two 750-gallon steel or wood sprinkling wagons.

MILWAUKEE, WIS.—Local reports state that the operation of the Jones Island garbage crematory has been found to be unsatisfactory. It is possible that it may now be sold or leased to some private corporation.

SPOKANE, WASH.—This city contemplates the erection of a garbage crematory and Alderman Baldwin has been visiting cities where plants are in operation.

LOS ANGELES, CAL.—Purchase of the existing crematory and the adoption of a municipal scavenger system is stated as favored by city officials. Dr. S. S. Salisbury is a member of the health board.

STREETS AND ROADS.

BURLINGTON, VT.—Work will probably be started this summer on the Williston road.

BOSTON, MASS.—An appropriation of $500,000 has been asked for the repair of state highways.

DUXBURY, MASS.—The sum of $12,000 will be spent on highways.

NATICK, MASS.—East Central and West Central Sts. will be macadamized at cost of $5,000.

LENOX, MASS.—The sum of $10,000 will probably be spent on roads.

NANTUCKET, MASS.—W. F. Codd, Cy. Engr., writes us that 1716 sq. yds. will be paved with broken stone, 1,700 sq. yds. with cobblestones and one street with block paving.

ROCKVILLE, MASS.—The sum of $4,000 has been appropriated for macadam roads.

SPRINGFIELD, MASS.—The paving question is being discussed. The cost is estimated at $15,000.

NEW LONDON, CONN.—Bids are asked until April 4 for grading at Fort Mansfield, R. I. Address Construct. Q. M., 27 Granite St.

ALBANY, N. Y.—A paving ordinance will be introduced in the council for Delaware and Yates Sts. and sidewalks for Central and Pine Aves.

BROOKLYN, N. Y.—The new boulevard, running from Flatbush Ave. to Sands St., will cost, including the property to be purchased, about $20,000,000.

NEW YORK, N. Y.—Bids are asked by the borough president, City Hall, until April 7, for paving 189,550 sq. yds. with asphalt, 4,690 cu. yds. of concrete and furnishing 508 Noiseless sewer and water manhole covers.——The board of estimate has decided to widen Delancey St. 40 ft. at cost of $4,500,000 and Suffolk St. at cost of $3,000,000.

NEW YORK, N. Y.—Bids are asked by the department of parks, Arsenal Bldg., 64th St. and Fifth Ave., until April 9 for furnishing screened gravel, broken limestone and grass sod. Also for paving walks in St. Mary's, Melrose and Macombs Dam Parks. R. Young, Comr.

NIAGARA FALLS, N. Y.—The board of public works has awarded Warren Bros.' Bituminous Macadam Paving Co. the Niagara Ave. paving contract.

CHESTER, PA.—Bids are asked by the sidewalk committee until April 6 for paving. C. G. Neal, Chn.

PHILADELPHIA, PA.—The ordinance providing for a boulevard from City Hall to Fairmount Park and another authorizing work on the Torresdale boulevard have been passed by the council. Cost, $250,000.

ANNAPOLIS, MD.—Bids are asked by the Navy Dept., Washington, D. C., until April 8 for paving at the U. S. Naval Academy. H. C. Taylor, Ch. of Bureau.

FORT WASHINGTON, MD.—Bids are asked until April 16 for constructing cement sidewalks. G. H. McManus, Q. M.

BIRMINGHAM, ALA.—The ordinances providing for the macadamizing of Ash and 22d Sts., costing $3,500 and $18,000 respectively, have been adopted.

NEW ORLEANS, LA.—Ordinances have been introduced in the council for paving various streets.

LOUISVILLE, KY.—Bids are asked until April 20 for paving East 11th St. with asphalt.

CINCINNATI, O.—The following contracts have been awarded: E. Evans, Hill St., with boulders, $12,445; T. H. Kirschner & Co., boulders, St. Gregory St., $6,299; Barber Asphalt Co., asphalt, St. Gregory St., $5,275, and McCarthy Bros., sewers in Murdock, Hawthorne and Considine Aves., for $3,649.

CINCINNATI, O.—Bids are asked by the board of public service until April 21 for paving the approaches to the Spring Grove Ave. bridge, over Mill Creek.——Bids are asked until April 21 for paving Calhoun St. with granite and asphalt.——Bids are asked until April 13 for paving Hatch St. with boulders and brick.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

DAYTON, O.—F. M. Turner, Cy. Engr., writes us that 12,000 sq. yds. on Cincinnati St., and 18,000 sq. yds. on Wayne Ave. will be paved with brick or asphalt. Bids will not be called for several months.

GREENVILLE, O.—Bids are asked until April 4 by E. E. Calderwood, for paving with block asphalt, three streets.

TOLEDO, O.—Petitions for paving Fifth and Potter Sts. are in circulation.

INDIANAPOLIS, IND.—Major Miller will have charge of the building of roads and drainage system for the new army post. The sum of $30,000 will be spent for this purpose.

LAFAYETTE, IND.—Bids are asked by the council until April 27 for paving Main, Fifth and Second Sts. with asphalt and constructing cement sidewalks on Eighth St. C. F. Williams, Cy. Clk.

MARION, IND.—T. E. Petrie, Cy. Engr., writes us that bids are asked by the council until April 14 for paving 16,000 sq. yds. with brick, and until May 5 for 45,000 sq. yds. of brick paving.

NEW CASTLE, IND.—G. E. Mahin, Cy. Clk., writes us that there will be about 24,370 sq. yds. of asphalt paving.

PORTLAND, IND.—Petitions are on file for improving various streets with brick, macadam and asphalt. Addess City Clerk.

RUSHVILLE, IND.—A. L. Stewart, Cy. Civil Engr., writes us that the council has authorized him to recommend the kind of pavement to be used. The material will be either brick, asphalt, bituminum or macadam.

TERRE HAUTE, IND.—Bids are asked by the board public works until April 20 for improving Walnut St. by grading and paving. S. C. Beach, Secy.

VINCENNES, IND.—J. D. Williams, Audr. Knox County, has ordered an election April 14 to vote upon the building of seven gravel and rock roads.

TRAVERSE CITY, MICH.—Bids are asked until April 15 for furnishing 8,800 sq. yds. of paving brick and 1,200 cu. yds. of crushed stone. C. M. Beers, Cy. Clk.

CHICAGO, ILL.—The paving proposition, estimated at $230,000, has been postponed until Sept. 25.

GALESBURG, ILL.—The paving of Main St. is being discussed.

DES MOINES, IA.—Petitions are in circulation for paving West 30th St.

DES MOINES, IA.—Bids are asked by the board of public works until April 13 for paving about 517 sq. yds. with brick. W. W. Wise, Bd. Pub. Wks.

ST. PAUL, MINN.—The Barber Asphalt Co. received the contract for paving Central Ave. for $8,679.

DULUTH, MINN.—Macadam pavement for Seventh St. is being discussed. W. H. Webb is interested.

NEVADA, MO.—J. M. Clack, Cy. Engr., writes us that bids are asked until April 21 for 13,500 sq. yds. brick paving and 5,000 ft. stone or concrete curb.

DALLAS, TEX.—Plans will be prepared by the city engineer for paving Ross Ave.

HOUSTON, TEX.—Bids are asked until April 13 for resurfacing Liberty Ave., Willow and San Jacinto Sts.; also until April 6 for paving McKinney Ave. with brick, asphalt or gravel. F. L. Dormant, Cy. Engr.

SHAWNEE, O. T.—Bids are asked until April 21 for paving 3,338 ft. on Main St. with brick. J. S. McIntyre, Cy. Clk.

SEATTLE, WASH.—Bids are asked by board of public works until April 4 for paving First Ave. with asphalt. C. B. Bagley, Secy.——Holt & McGuire received the contract for concrete sidewalks at $2,273. J. Frank received contract for concrete sidewalks on 21st St. for $6,029.

SOUTH BEND, WASH.—Bids are asked by county commissioners until April 9 for grading the South Bend-Willapa road. W. R. Gray, Chn.

LOS ANGELES, CAL.—Reports state that the widening of Sixth St. is contemplated at cost of $150,000 to $200,000.

MONROVIA, CAL.—It is stated that Orange St. will be graded and cement walks laid.

SAN FRANCISCO, CAL.—The street committee has decided to extend Fifth Ave. at cost of $6,500.——B. Heath, Ch. Bureau Streets, has reported that 700,000 cu. yds. of sand would have to be removed at cost of $7,000.

VALLEJO, CAL.—Bids are asked until April 26 for paving 6,000 sq. yds. with asphalt. A. P. Noyes, Cy. Engr.

SALT LAKE, UTAH.—The board of public works will soon advertise for bids for paving Tenth East St.

TORONTO, ONT.—The bd. of control has let the following paving contracts: With asphalt, Elm Ave. and Bathurst St., Warren Bituminous Paving Co., $3,234 and $27,500 respectively; Barber Asphalt Co., George and Yonge Sts., $13,444 and $28,399 respectively; with brick, W. F. Grant & Co., Turner Ave., $2,390; John McGuire, Sherbourne St., $3,352, and with tar macadam, Warren Bituminous Paving Co., Salter St. and Augusta Ave., $3,575 and $8,725 respectively.

WINDSOR, ONT.—Bids are asked until April 10 for supplying broken stone for macadamizing. S. Lusted, Cy. Clk.

BONDS.—A bond issue of $500,000 is being discussed by Hillsboro, Tex.——Dallas, Tex., may issue $500,000 for the improvement of roads.——Bay City, Mich., will issue $50,000 worth of street and sewer bonds.——Alexandria, La., will hold a $28,000 bond election April 14.

MANUFACTURING PLANTS.

PORTLAND, ME.—The Portland Iron & Steel Co. will rebuild plant which was destroyed by fire. It will employ 400 men.

MANCHESTER, N. H.—The American Cotton Duck Co. may remove the Stark mills to Alabama.

NORWALK, CONN.—Otto Muller & Co., Goerlitz, Germany, contemplate erecting a $100,000 plant to manufacture silk umbrella coverings and tapestry hangings. Probably 150 skilled workmen will be brought from Germany.

WALLINGFORD, CONN.—It is reported that R. Wallace Sons' Mfg. Co. will erect an addition to its plant and employ 100 more workmen.

BLACKROCK, N. Y.—Druar & Hunsicker, Engrs., 288 Franklin St., are preparing plans for a plant to manufacture cotton batting. It will be two stories high, of brick, steel and concrete, lighted by electricity supplied from Niagara Falls, and cost about $15,000.

BUFFALO, N. Y.—The George B. Swift Co. received the contract for the Rock Island Ry. Co.'s $800,000 locomotive plant. There will be 20 buildings, the largest of which will be a machine shop, 264 × 800 ft.

ALLEGHENY CITY, PA.—Plans have been prepared by F. R. Felkel, C. E. and Arch., 419 House Bldg., Pittsburg, for the new foundry of the Eagle Foundry & Machine Co. at 1025-27 South Canal St., this city. The structure will be of brick and steel with asbestos roof on 2-in. boards and will have a cupola platform of steel construction, 26 × 60 ft. The building is so planned that the cranes from the other adjacent buildings can be run in and out at will. The main traveling crane will have a lifting capacity of 20 tons. A 5-ton crane will be located in the east wing.

ALLENTOWN, PA.—The Allentown Machine & Foundry Co. has invited estimates for a new 2 and 3-story brick and steel plant.

CHESTER, PA.—A silk mill may be erected.

DOWNINGTOWN, PA.—S. A. Bicking will soon have work started on a 3-story brick, slow-burning addition to his paper mill.

LITITZ, PA.—The Keystone Underwear Co. will soon have work started on a 2-story brick addition, 85 × 40 ft.

NEW KENSINGTON, PA.—J. D. Lalor, Engr., 1305 Arch St., Philadelphia, writes us that the Westmoreland Boiler Co.'s plant will consist of three buildings, 200 × 70, 100 × 25 and 15 × 15 ft. Brick, sheet iron and steel will be used. Two 13 × 12 auto engines, two water-tube boilers, machine tools, pneumatic and electric cranes and foundry equipment will be required. Cost, including equipment, will be $120,000.

PHILADELPHIA, PA.—The Wright Mfg. Co., 135 Master St., is receiving bids for a 3-story brick, slow-burning addition, 40 × 60 ft.——Haines, Jones & Cadbury, 12th and Ridge Aves., have taken estimates and will soon award contract for a 4-story brick, slow-burning warehouse and factory, 64 × 122 ft., at 12th and Buttonwood Sts.

SUMMERDALE, PA.—A. R. Raff, 1635 Thompson St., Philadelphia, received the contract for constructing a new 3-story brick, slow-burning factory, 225 × 180 ft., for the Wolff Chemical Co., for $70,000.

SHARON, PA.—Reports state that J. Stevenson, Jr., will build gas engine works in the Shenango Valley.

CUMBERLAND, MD.—A. Consill, Wyatt Bldg., Washington, D. C., received the contract for erecting the 3-story brick silk mill for Klotz Bros. for $75,000. L. C. Holden, Arch., 1133 Broadway, New York.

HAGERSTOWN, MD.—The University Envelope & Paperie Co., Baltimore, may erect a factory, which would employ 150 hands.

WASHINGTON, D. C.—B. F. Simmons, Arch., Warder Bldg., is preparing plans for the Copeland Co.'s 3-story brick, slow-burning factory.——The District of Columbia Paper Mfg. Co. is having plans prepared for a 5-story brick, slow-burning addition to their factory.

CLARKESBURG, W. VA.—The plant of the Preston Tumbler Co., near Alta, has been destroyed by fire, entailing a loss of $50,000.

HICKORY, N. C.—G. F. Ivey writes us that the cotton mill to be erected will be two stories, brick, 75 × 200 ft., and cost $72,000, including equipment. O. A. Robbins, Arch., Charlotte, N. C.

MAYODAN, N. C.—A cotton mill may be built at the Anglin Mill on the Mayo River.

NEW BERN, N. C.—If the farmers will agree to raise 200 acres of pickling cucumbers, H. J. Heinz Co. will erect a pickling plant.

SPARTANBURG, S. C.—P. J. Smith received the contract from the Woodruff Cotton Mills, to erect 40 operatives' houses. Machinery has been ordered.

ANDERSON, S. C.—The Anderson Phosphate & Oil Co. will erect a $50,000 mill, to manufacture cotton batting, comforts, etc. F. G. Brown is Pres.

WAYCROSS, GA.—The South Atlantic Car & Mfg. Co. will soon have work started on its factory. G. D. Wadley may be elected president.

MACON, GA.—The Royster Guano Co., Norfolk, Va., will soon erect a $1,000,000 guano and fertilizer plant.

JACKSONVILLE, FLA.—Herman Winter, Pres. of the Herman Winter Brewing Co., has stated that he intends to erect a brewery.

GADSDEN, ALA.—The Gadsden Pipe & Foundry Co. is having plans prepared for a machine shop, 40 × 80 ft.

NEW ORLEANS, LA.—J. H. Cook, Montgomery, Ala., received the contract for erecting a $100,000 cold-storage plant.

NASHVILLE, TENN.—The Nashville Coffee Co., capitalized at $100,000, will increase its capital and erect a plant in Texas.

CHATTANOOGA, TENN.—The S. A. Williams Lumber Co. will erect a factory at cost of $30,000.

KNOXVILLE, TENN.—Reports state that the Southern Ry. Co. will enlarge its shops.

STEVENSPORT, KY.—Logan C. Murray, Louisville, and J. T. Elsorn, New Albany, Ind., contemplate erecting a cement plant at cost of $500,000.

LOUISVILLE, KY.—The Hydraulic Brick Co. will purchase new machinery and 20 freight cars. H. A. Rumesnil is Pres.

ASHLAND, O.—T. O. Stearns has stated that plans will be prepared for a 65 × 175-ft. factory for the Reliable Match Co. B. F. Hursh, Arch., Mansfield.

AKRON, O.—The Niagara Fire Extinguisher Co. has increased its capital from $250,000 to $1,000,000 and will refit a large manufacturing plant. H. Townsend is Pres., and W. E. Allen, Gen. Mgr.——The Indian Rubber Co.'s plant has been destroyed by fire, entailing a loss of $210,000.

CLEVELAND, O.—Bids are asked until April 9 for one 75-HP. horizontal tubular boiler and two mechanical stokers. C. P. Salen, Dir. Pub. Wks.

CANTON, O.—The Structural Steel Co. will probably enlarge its plant. H. A. Cavanaugh is Pres.

LANCASTER, O.—Col. C. B. Adams, Supt. Boys' Industrial School, will soon invite proposals for one 35-HP. electric motor for new industrial building, and 175,000 paving brick for completing Main Ave. paving.

HAMILTON, O.—The milling and elevator department of the C. M. Semler Milling Co. has been destroyed by fire, entailing a loss of $50,000.

MARION, O.—The Fairbanks Construction Co. has not as yet purchased all of the equipment for new plant.

FORT WAYNE, IND.—Supt. McKimm has announced that the car building plant of the Pennsylvania R. R., which was destroyed by fire at loss of $100,000, will be rebuilt.

EVANSVILLE, IND.—G. A. Shiedler and others of Marion will erect a glass factory.

INDIANAPOLIS, IND.—J. F. Dormody & Co. will erect a 4-story candy factory on Meridian St.——The Terre Haute Brewing Co. will let the contract within 30 days, for its cold-storage plant and ice factory, on the site of the Premier Steel Mill.

MUNCIE, IND.—The Ideal Stove Works will have a new building erected and will remove its machinery. The company will manufacture steel ranges.

CHICAGO, ILL.—The Western Electric Co. has purchased 110 acres and will erect a plant costing about $2,000,000. The building includes a cable plant, 300 × 200 ft.; office building, 462 × 52 ft; power plant, 200 × 200 ft.; foundry, 400 × 175 ft.; machine shop, 820 × 150 ft.; pattern storage building, 220 × 52 ft.; water tower, 40 × 40 ft., and fire department, 44 × 60 ft. S. A. Treat, Arch., 279 Dearborn St.

FORT DODGE, IA.—The Barber Asphalt Co. will erect a $50,000 plant.

ST. PAUL, MINN.—A large plant will be built by Twin City men for the manufacture of malleable iron. Capacity will be 15,000 tons of finished castings.

GREAT FALLS, MONT.—C. W. Swearingen, Cy. Engr., writes us that the Great Falls Iron Works will erect an $8,000 foundry.

KANSAS CITY, MO.—Nelson Morris & Co., Chicago, will erect a $1,000,000 packing house.——The Bemis Bros. Co. will manufacture bags at 1305 West 12th St. New machinery to be installed. One hundred hands will be employed.

ARCOLA, TEX.—The Arcola Sugar Mills Co. will erect a sugar mill. F. Andrews, Houston, is one of the incorporators.

BEAUMONT, TEX.—A paper mill may be erected with a daily capacity of 20,000 pounds. W. S. Davidson is interested.

ANACORTEZ, WASH.—E. L. Burgue, Ballard, will construct a shingle mill. The capacity will be 125,000 shingles daily.

SEATTLE, WASH.—Reports state that the Great Northern Ry. Co. will erect car shops at the terminal yard.

GOLDENDALE, WASH.—Garrett Bros. will establish a brick plant with a capacity of 20,000 bricks a day.

NORTH YAKIMA, WASH.—The Yakima Ditch Pipe Co. will erect a plant to manufacture pipe.

SOUTHBEND, WASH.—The West Coast Veneer & Mfg. Co. will locate at this place. W. W. Wood is Pres., California Bldg., Tacoma.

WHATCOM, WASH.—J. D. Leadbetter will establish a shipyard on Central Ave.

SANTA ROSA, CAL.—A glove factory may be erected. R. Carlsen is Secy. Glove Mfrs. Assn.

SANTA BARBARA, CAL.—A blast furnace will be erected by a Mexican syndicate.

SANTA ANA, CAL.—J. E. Taylor & Co. writes us that C. McNeil received the contract for erecting the 50 × 100 ft. cannery, costing $3,500.

VISALIA, CAL.—F. Smith, Mgr. of the Condensed Milk factory, will select a site for a pickle plant.

HULL, QUE.—The International Cement Co. will erect cement mills at Leamy's Lake. Alderman G. W. Saddler is interested.

PORT HURON, ONT.—The Port Huron Engine & Thrasher Co. has consolidated with Port Huron Mfg. Co. and Port Huron Malleable Co. and will enlarge their plants.

MISCELLANEOUS CONTRACTS

PARK WORK.—Pomona, Cal.—City may improve parks at cost of $30,000.

DAM WORK.—Jonesboro, Ind.—The rebuilding of the Mississinewa River mill dam is projected.

WHARF.—Long Beach, Cal.—M. Keleher has applied for authority to construct a wharf at Cypress Ave.

MINING FURNACE.—Lakeport, Cal.—The Baker Quicksilver Mining Co. intend to install a 10-ton furnace this year.

LEVEE.—Covington, Ind.—The rebuilding of a levee in Wabash and Fulton townships for flood protection is proposed.

ORE TRAMWAY.—Lewiston, Idaho.—The American Eagle Mine, according to reports, will install an ore tramway.

RIPRAP.—Ashland, Wis.—The contract for furnishing riprap here has been let to A. Donald & Co., Ashland, for $22,100.

DITCH.—Tekamah, Neb.—Bids are asked until April 7 for constructing a ditch, 8,146 ft. long. C. G. Clark, County Clk.

ELEVATORS.—Chicago, Ill.—The sum of $25,000 has been appropriated for a battery of four elevators for the County Bldg.

MINING FURNACE.—Gilroy, Cal.—The Stayton Quicksilver Mines, according to reports, is to install a furnace this summer.

ORE PLANT.—Nogales, Ariz.—The Oneida Gold & Copper Co., according to reports, intends to erect a plant for treating ores.

WHARF.—San Pedro, Cal.—The South Coast Yacht Club has asked for a franchise for a wharf, to be 360 ft. long and 8 ft. wide.

STAMP MILL.—Sumpter, Ore.—Press reports quote J. F. Meikle as saying that the Black Eagle Co. would erect a 200-stamp mill.

PARK.—Revere, Mass.—A committee has been considering the matter of constructing a park at the "clay pits" at a cost of $12,000.

LOCOMOTIVE.—Fort Monroe, Va.—Bids are asked until April 20 for furnishing a 12-ton steam locomotive. C. P. Townsley, Q. M.

GUN BOATS.—Washington, D. C.—Bids are asked until May 19 for constructing two gun boats. Chas. H. Darling, Acting Secy. of Navy.

BREAKWATER REPAIRS.—Burlington, Vt.—John Cashman, Quincy, Mass., at $54,103, was successful bidder for repairing breakwater.

ORE MILL.—Custer, Idaho.—Reports state that the Goldern Sunbeam Mining Co., C. E. Cable, Mgr., is to install a 50 to 100-ton ore mill.

JETTY.—Galveston, Tex.—Moore & Seiber, Texas City, Tex., at $46,000, was the only bidder for removing part of the old jetty at Aransas Pass.

STAMP MILL.—Virginia City, Nev.—It is stated that a 60-stamp quartz mill will be erected on the Nelson Mining property in Elko County.

MARINE WAYS.—Eureka, Cal.—The Benedixon Shipbuilding Co., according to reports, proposes to construct a set of marine ways at its plant.

SMELTER.—Missoula, Mont.—It is said that a site has been bought near Iron Mountain for the erection of a smelter to treat Couer d'Alene ores.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

MINING WORK.—Gadsden, Tenn.—The Underwood Coal Co., located at Altoona, will spend, it is said, $50,000 in enlarging the capacity of its plant.

RIVER IMPROVEMENT.—Buffalo, N. Y.—The contract for dredging five sections of Buffalo River has been let to the Buffalo Dredging Co. for $312,000.

PIER REPAIRING.—Charleroix, Mich.—The contract for repairing piers at Charleroix Harbor has been let to A. J. Beauvais, Muskegon, Mich., for $8,965.

DAM.—Norfolk, Va.—Bids are asked until April 30 for rock removal and constructing riprap dam in Roanoke River, as is stated in our advertising columns.

DREDGING.—San Francisco, Cal.—The board of public works has been engaged on plans for dredging out the inner harbor to a depth of 33 ft. at mean low water.

PLAYGROUND AND PARKS.—Cincinnati, O.—The board of legislation has passed an ordinance providing for a $1,000,000 bond issue for parks and playgrounds.

COMFORT STATION.—New York, N. Y.—Bids are asked by the Park Board until April 9 for constructing a comfort station in Morningside Park. Wm. R. Wilcox, Comr.

RIPRAP STONE.—Washington, D. C.—Bids are asked until April 14 for furnishing, and placing riprap stone in dikes in Occoquan Creek. Lt. Col. Chas. J. Allen, U. S. Engrs.

MECHANICAL STOKERS.—Cleveland, O.—Bids are asked by Chas. P. Salen, Dir. Pub. Wks., until April 9 for mechanical stokers for two 75-HP. horizontal tubular boilers.

BROOK IMPROVEMENT.—Syracuse, N. Y.—Alderman P. J. McGlade has secured the passage of an ordinance carrying $14,000 appropriation for improving Harbor Brook.

SMELTER.—Livingston, Mont.—It is stated that the Montana Scotch Bonnet Mining Co. will install a 250-ton smelter in the New World District at a cost of $70,000.

FIRE ENGINES.—Toledo, O.—Wm. Mayo, Ch. Fire Dept., has asked for an appropriation for five new steamers, a fire boat, fire alarm telegraph equipment and new hose.

FIRE DEPARTMENT IMPROVEMENT.—Berkeley, Cal.—City may vote on $10,000 bond issue for fire department improvements—$5,000 of which would be for equipment.

WIRE ROPE THIMBLES.—A correspondent in New York wants the names and addresses of makers of wire rope thimbles. Address "E. H. F.," Engineering News, New York.

MUD DREDGER SUPPLIES.—A correspondent in New York wants the names and addresses of dealers in mud dredger supplies. Address "E. H. F.," Engineering News, New York.

DREDGING.—Boston, Mass.—Bids are asked until May 1 for dredging narrows in Lake Champlain, Vt., as is stated in our advertising columns. Capt. Henry Taylor, U. S. Engrs.

DREDGES.—Folsom, Cal.—Reports state that the Folsom Development Co. will construct two dredges on Texas Hill, and that a third dredge will be installed by the Ashburton Mining Co.

DREDGING.—Washington, D. C.—Bids are asked by the Bureau of Navigation, Navy Department, until April 10 for dredging at U. S. Naval Academy, Annapolis, Md. H. C. Taylor, Ch. Bu.

CABLES.—Washington, D. C.—Bids are asked until April 4 for furnishing underground signal and telephone cables, as is stated in our advertising columns. Henry B. F. MacFarland, Comr.

PILE BRIDGE ROADWAY.—Seattle, Wash.—Bids are asked until April 4 for constructing a pile bridge roadway and crossings, from University to Broad St. C. B. Bagley, Secy. Pub. Wks.

DAM.—Catlettsburg, Ky.—The contract for constructing a dam at the mouth of the Big Sandy River at Catlettsburg has been let to the Sheridan & Kirk Contracting Co., Cincinnati, O., for $94,617.

DREDGES.—Washington, D. C.—It is expected that plans will be completed early in April for two new dredges for the War Department to be used in dredging Ambrose Channel, New York Harbor.

DRAINAGE.—Tomah, Wis.—Bids are asked by the Lemonweir River Drainage District until May 15 for digging main and lateral ditches, as is stated in our advertising columns. Wm. S. Fryer.

DITCH AND LEVEE.—Clay City, Ind.—The Illinois Improvement Co. is said to have plans under way for a ditch to reclaim 4,000 acres of land in Sulphur Creek Basin. A levee will also be constructed.

DRAINAGE DITCH.—St. Cloud, Minn.—Reports state that bids are asked until April 20 for constructing a nine-mile drainage ditch in towns of Getty and Grove. John C. Crever, County Auditor.

QUICK LIME.—Bids are asked by the Brooklyn Borough President until April 8 for 4,350 bbls. quick lime at the several sewage disposal works in 26th and 31st wards. J. Edw. Swanstrom, Pres.

MINING MILL.—Park Valley, Utah.—The mining mill of the Century Mining Co. at this place is reported to have been destroyed by fire, causing $32,000 loss. Reports state that the plant will be rebuilt.

WHARF.—Portland, Me.—Bids are asked by the constructing quartermaster, 185 Middle St., until April 15 for constructing steel or stone wharf at Fort McKinley. Capt. A. W. Yates, Q. M., U. S. A.

OIL FIELD DEVELOPMENT.—Pittsburg, Pa.—The Pittsburg & Indiana Oil & Gas Co. has increased its capital stock by $500,000 and will open three more oil fields. W. R. McConnell, Pittsburg, is Secy.

STEAMERS.—Montreal, Que.—Michael Connolly, who has various government contracts in the Lower Provinces, is stated to be in the market for two or three steamers to be used in connection with the work.

MOVING SIDEWALKS.—Chicago, Ill.—Wm. E. Furness has had an ordinance introduced in the council providing for a system of moving platforms within subways, tunnels and underground conduits in Chicago.

CRANE SCOW.—Washington, D. C.—Snare & Triest Co., 39 Cortlandt St., New York, N. Y., was the only bidders for a 30-ton crane scow for Boston Navy Yard, they offering an alternate bid of $28,100.

FLOATING BATHS.—Brooklyn, N. Y.—Bids are asked by the Brooklyn Borough President until April 15 for material and labor for repairing and fitting out five free floating baths. J. Edw. Swanstrom, Pres.

COKE OVEN CONSTRUCTION.—Pittsburg, Pa.—Rankin & Hengst, Engrs., Marine Bank Bldg., Pittsburg, want information regarding the construction of beehive coke ovens. They have 300 of these to build.

DOCKS AND DRAINS.—New Rochelle, N. Y.—Horace Crosby, Cy. Engr., writes us that the construction of the new stone dock involves piling, dredging and the like. The storm water drains are to be 3 ft. in diameter.

PIER AND BREAKWATER WORK.—Washington, D. C.—Contract for pier and breakwater extension at Little Sodus Bay and Cape Vincent, N. Y., has been let to the Buffalo Dredging Co., Buffalo, N. Y., for $64,081.

SMELTING PLANT.—Canyon City, Colo.—Local reports state that the main part of the smelting works of the United States Reduction & Refining Co., at this place, was destroyed by fire last week, causing a loss of $200,000.

WHARF WORK.—Quebec, Que.—Bids are asked by the Dominion Government until April 17 for constructing cribwork and concrete wharf in Quebec Harbor. H. A. Grey, Confederation Life Bldg., Toronto, Ont., is Engr.

METALLIC CASES.—Sacramento, Cal.—The following bids were received for furnishing metallic cases for the county clerk's office: Youman & Erbe Manufacturing Co., $9,967; Diebold Safe & Lock Co., $9,887; Waterhouse & Price, $10,300.

RIVER IMPROVEMENT.—Rumford Mills, Me.—The American Realty Co. will, it is said, spend about $15,000 this summer in blasting out rocks and building wing dams in the Androscoggin River. Chas. E. Oak, Bangor, Me., is interested.

RETAINING WALL, ETC.—Troy, N. Y.—Bids are asked by the board of contract and supply until April 3 for constructing Portland cement concrete retaining wall and coping, a rustic fence and subgrading of public park avenues. James M. Riley, Clk.

STEAM SHOVELS, CARS, ETC.—New York, N. Y.—"Construction," care Engineering News, New York, wants addresses of contractors owning steam shovels, cars and locomotives for large contract; also those owning compressors and complete tunnel plant.

FLOOD PROTECTION.—Memphis, Tenn.—J. A. Omberg, Cy. Engr., has been instructed to report on means for protecting the land adjacent to Bayou Gayoro from high water. Petitions have been circulated asking that a tax of $200,000 be levied for the work.

ARMORED CABLE, ETC.—Cleveland, O.—Bids are asked until April 25 for about 300,000 ft. of lead armored cable for police signal system. Bids will also be received for furnishing complete police telegraph and telephone system. John Dunn, Director Police.

UNDERGROUND CONDUITS.—San Francisco, Cal.—The public works department is reported as considering the introduction of a system of underground conduits, large enough to carry all wires, pipes, gas mains, etc. The estimated cost of such work is about $10,000 a block.

APPARATUS FOR BURNING POWDERED FUEL.—Lewiston, Me.—The Union Water Power Co., of Lewiston, Me., wants the names and addresses of companies who design and install apparatus for burning powdered fuel under tubular boilers. W. H. Sawge, Agent, Lewiston.

CEMENT, SAND, WATER SUPPLY, ETC.—Washington, D. C.—Bids are asked until April 30 for Portland and natural cement, sand, gravel, road construction, etc., sewers, drains and water supply at Washington Barracks. Capt. J. Stephen Sewell, U. S. Engrs., Acting C. M.

DITCH.—Petersburg, Ill.—The contract will be let April 3 for constructing 11-mile dredge ditch. The ditch is to be 60 ft. at the top and 40 ft. wide at the bottom and will require 1,000,000 cu. yds. excavating. A. H. Bell, Engr., Bloomington, Ill., James H. Dearborn, Chn. Comrs.

TRAMWAY.—Summit, Idaho.—G. W. Bashor, Pres. and Mgr., Summit Tramway Co., writes us that they propose to build a single or double cable aerial tramway, 2½ miles long, for transporting grain in sacks, merchandise, etc., and will probably receive bids until May 15.

MINING WORK.—R. H. Hingston, Mgr., writes us, under date of March 20, that the New York-Seattle Copper Mining Co. will itself drive the proposed new development tunnel. Mr. Hingston also writes that plans for an 80-ton concentrator are being made and as soon as completed bids will be called.

MONUMENT DESIGNS.—Portland, Ore.—Designs for a memorial monument to the Second Oregon Volunteers who died in service in the Philippines, will be received by a committee, Col. James Jackson, Pres., until June 15. The completed monument is to cost $15,000 and $1,000 will be paid for the accepted design.

PARKS AND BOULEVARD.—St. Louis, Mo.—A commission, of which Frank D. Ridgely was a member, has reported on the proposed improvement of King's Highway. They recommend that a boulevard 20 miles long skirt the entire west side of the city and six parks be built along the drive. The total cost is estimated at $1,500,000, $700,000 of which is for parking and improving the highway.

BEACH IMPROVEMENTS.—New York, N. Y.—The Bergen Beach Amusement Co. is stated to have purchased the property at the beach owned by the Bergen Beach Improvement Co. with the intention of spending some $260,000 in making various improvements. New attractions, including a cycloidal carrousel, an electric "racecourse" and an electric fountain, together with tennis courts and bowling alleys, are to be added. Horace E. Hartwell, 123 Liberty, New York, N. Y., is Treasurer.

U. S. POSSESSIONS AND CUBA.

DREDGING.—Honolulu, H. I.—Bids are wanted by Henry E. Cooper, Supt. Pub. Wks., until April 30 for dredging a portion of Honolulu Harbor. Information can be had of Welch & Co., 220 California St., San Francisco, Cal.

ICE PLANT.—Puerto Principe, Cuba.—Reports from Birmingham, Ala., state that J. S. Shannon and associates are interested in the plan to erect a new modern ice factory in this city.

NAVAL STATION.—Cuba.—Secy. of the Navy Moody has selected Guantanamo as the principal U. S. naval station in the West Indies. The purchase of 20 sq. miles of land on both sides of the lower bay and several small islands will be recommended. As soon as the necessary legislation has been secured the construction of a permanent barracks, dry-dock and fortifications will be commenced.

RAILWAY.—Alaska.—It is reported that the plans for the railway to be built by the Bering Sea & Council City Mining Co. between Nome and Council City, Alaska, have been completed. Dr. A. De Sota is Pres.

FORTIFICATIONS.—Alaska.—The War Department is reported to have under consideration the erection of defensive works at Sitka and Dutch Harbor, Unalaska Island, Alaska.

WATER WORKS FRANCHISE.—Valdez, Alaska.—S. G. Mathews has applied to the council for a franchise in this city to lay water mains. He proposes to have 3,000 ft. of main operating by Oct. 31.

FOREIGN CONTRACTS—EXPORT NEWS.

RAILWAYS.—Siberia.—R. T. Greener, Commercial Agent at Vladivostock, reports under date of Jan. 18 as follows:

ELECTRIC TRACTION.—Montevideo, Uruguay.—An electric traction system is projected. Ramez Suarez is primarily interested.

ELECTRIC TRACTION.—Para, Brazil.—The horse-car system in this city operated by the Compania Urbano is to be transformed into an electric system.

ELECTRIC LIGHTING CONCESSION.—Dutch Guiana, S. A.—The Governor of Dutch Guiana has been authorized to grant a concession for the installation of electric light and power in Paramaribo; population, about 32,000.

CABLE AND WIRE.—Italy.—Bids are wanted by the Directorate-General of Royal Arsenals at Spezia until April 9 for a supply of electrical cable and wire to the Italian Navy, amounting to about 60,000.

ELECTRIC TRACTION.—France.—The Ouest Ry. it is stated, will convert its Ceinture line, operating between Passy and Auteuil in the vicinity of Paris, into electric traction and to extend its Les Invalides section to St. Cloud.

ELECTRIC LIGHTING.—Pretoria, S. Africa.—The firm of Morday & Dawbarn, of London, Eng., are the consulting engineers for the proposed electric lighting system in this city on which the municipal authorities will expend some $750,000.

MACHINERY.—Sweden.—It is reported that the Holmstads Stenhuggen Aktrebolog, which operates 28 granite quarries at Holmstad, will shortly place contracts in this country for some $50,000 worth of machinery, as the result of the visit of Otto Petersen, Mgr. of the company, to the United States last year.

LIGHTING AND TRACTION SYSTEM.—South Africa.—The local public works authorities of Potchefstroom, Transvaal, are reported to be considering the advisability of establishing an electric lighting and traction system in that place. The establishmetn of electric lighting and water supply systems in Umtata are already decided on.

HARBOR IMPROVEMENTS.—Jamaica.—The date of opening of bids by the Director of Public Works of Jamaica, Kingston, for the improvement of the Harbor of Falmouth, Island of Jamaica, has been postponed from April 30 to May 30, as stated in our advertising columns. The work is more fully described in those columns; it will include the excavation of about 16,450 cu. yds. of rock.

"The council of state has received for approval the following extraordinary estimates for railways: $300,000 for a connecting line between the Transbaikal and the Manchurian line, $10,300,000 for the road around Lake Baikal, and $1,030,000 for the road from the Soochau coal mines to Nahodka Bay, and also for a line from the Ussuri Railroad to the same mines, to facilitate transportation to Vladivostock. While the other items are likely to be approved, there is a rumor that the last-named amount will not be granted. For transportation from Nahodka Bay to Vladivostock private steamers will be employed instead. It is reported that $103,000 have been assigned for the exploitation of these mines for the present year. According to the Siberian Reporter a private company has formed a syndicate of Russian and foreign capitalists to lay a railroad from the Main Asiatic to the Great Siberian line, arranged to traverse the fertile districts of Tomsk and serve as the shortest means of transportation into central and eastern Siberia, Mongolia, and Manchuria, and for Chinese goods, especially tea, to Transcaspia, and to the north of Persia."

MEXICO.—MISCELLANEOUS WORKS.—Mexico City.—A correspondent sends the following: The contract for constructing the Michoacan Southern R. R. will soon be let, according to the statement of W. E. Powell, of New York, who is prominently identified with the project. Mr. Powell has gone to New York to arrange the details preparatory to beginning active construction of the line. The proposed road will be about 250 miles long and will run from the city of Irapuato to Morelia, Tacambaro and Ario.——The Mexican Central R. R. has decided to build a branch from Musquiz, through the coal fields of the Barroteran district, to Lampazos. Engineer Edwin Stalter and party of surveyors have just completed locating the route of the proposed line. The company also plans to begin soon the construction of its branch line from Monterey to San Miguel. Lewis Kingman is Ch. Engr.——George Braniff, of this city, has applied to the government for authority to use water from the Lerma River for motive power.——The National Biscuit Co. contemplates establishing a large factory in this city. Emilio Arner, the representative of the company in Mexico, has been called to New York to confer with the officials of the corporation in regard to the proposed plant.——J. Sitzenstatter has obtained a concession from the federal government for establishing a telephone system in this city and the towns situated in the federal district. The terms require that work shall be completed within two years.——The municipal authorities here have granted the Mexican Light & Power Co. authority to install within the city limits receiving stations and wires for the transmission of electrical energy from the falls of the Necaxa River. The main transmission line will be 95 miles long. This company is composed of Canadian capitalists and has a capital stock of $12,000,000. F. S. Pearson, formerly Chief Engineer of the Metropolitan St. Ry. Co., of New York city, is Consult. Engr.

OAXACA.—Rodolfo Francisco, State Engr., is preparing plans for a new general hospital building to be erected here.

SALTILLO.—The Coahuila & Zacatecas R. R. will build a branch line from Avalos to the San Pedro de Ocampo mining district. The contract for the construction has not yet been let, but the preliminary plans have been made for the early building of the road.

MAPIMI.—The Penoles Mining Co., of this place, contemplates building a railroad to the San Pedro del Gallo coal fields.

TORREON.—Pablo Schugt, of this place, has obtained a concession from the government of the state of Coahuila for a brewery here, which requires that $500,000 shall be invested in the enterprise. Exemption from taxation for 15 years is granted.——The International Packing Co. will erect a slaughter house here.

ALTAR, STATE OF SONORA.—An ice factory is to be established here by Morincau Bros.

MONTEREY.—The construction of the buildings for the Monterey Gas Co. has begun; $100,000 will be invested in the plant. R. N. Oakman is Mgr.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

SAN CRISTOBAL.—The state authorities of Chiapas will erect two large bridges on the Coatan River.

GUADALAJARA.—Extensive improvements are to be made to La Libertad market place by the municipal authorities.

LINARES.—It is announced that the San Carlos Copper Co., of which W. H. Nichols, New York city, is Pres., will build a railroad from this place to San Carlos, where the mines of the company are situated.

GUADALAJARA.—We are informed that the Mexican Telephone Co. has secured a new 30-year contract from the city council under which it can build underground lines in addition to its present aerial wires; also that the government of the state of Coahuila has granted a concession to the company which is exploring the Ocampo and Bonanza mines to construct a railway from the mining camp to the Jazminal station.

CHIHUAHUA.—Local papers state that Don Lorenzo Gonzales Trevino is working out an irrigation scheme for the valley of Rio Grande River on the Mexican side, between Eagle Pass and Las Vacas. The digging of the ditch to irrigate the first 10,000 acres is being pushed and will be extended to cover 63,000,000 acres. About $3,000,000 has already been expended.

STATE OF GUERRERO.—The Mitchell Mining & Smelting Co., Geo. Mitchell, Los Angeles, Cal., Pres., is operating in this state and has just had a survey of a railroad made from its copper mines to Acupulco, a distance of 65 miles. Machinery for the mine and material for the road construction will be shipped from San Francisco. Work on the company's smelting plant is under way.

MONTEREY.—John W. De Kay, Secy. U. S. Packing Co., has applied to the state government for a concession to establish a packing house and shoe factory in this state. About $1,000,000 is the investment contemplated. Mr. De Kay has also applied for concessions in states of Vera Cruz and Michoacan.

MEXICO CITY.—Valetin Elcoro & Co., Mexico City, are said to be acting as purchasing agents for a Mexican syndicate which proposes to construct an extensive aluminum smelting plant, to be operated by water power.

STATE OF SONORA.—The Reydel Oro Mining Co. is said to be contemplating building some 210 miles of electric line from its mines in this state to a connecelon with the Southern Pacific R. R. The motive power will be generated by a waterfall at the east terminus. The company also contemplates an extension of the line when built to the anthracite coal fields on the banks of the Yaqui River. Percey Sharpe, Gen. Mgr., was recently in Muncie, Ind., inspecting the local traction systems and obtaining information in the interests of the company's projects.

AGUASCALIENTES.—We are informed that an American company has perfected an arrangement with the government for a trolley system at Aguascalientes, and it is said that as soon as Congress ratifies the contract, Mr. Douglass, representing the company, will leave for the United States to place an order for machinery required for the power plant and a large quantity of rolling stock. Plans for the system have already been prepared, so that construction will be begun and rushed to completion as soon as the material arrives.——It is reported here that parties with $100,000 to invest in the enterprise are about to establish an ice plant with a capacity of 5,000 kilos per day.——A brewery with a capacity of 1,000,000 liters a year and with a capital of $100,000 is also planned.——W. W. Graham, Rafael Gonzalez Pratt and Manuel Macotela have applied for a concession to utilize the waters of the River Grande, in the district of Temascaltepec, in the state of Mexico, to generate electricity for use at any point that may be convenient. The quantity of water to be used is 10,000 liters per second.

LA JOYA.—R. M. Burke, former U. S. Consul at Chihuahua, who recently obtained a concession for a water-power plant to supply Chihuahua and Parral, is ready to let contracts for equipment. The plant is to be constructed at La Joya, on the Concho River.

LA BARRANCA.—The Yaqui Smelting & Refining Co., which will establish customs smelting works at San Antonio de la Huerta, on the Yaqui River, near La Barranca, has shipped its machinery to the site.

GUADALAJARA.—A correspondent writes that a concession has been obtained by Thomas McManus, representing the Cananea, Yaqui River & Pacific Ry. Co., consolidating the various concessions of September, 1900, October, 1901, and July, 1902. Under the new charter the company is authorized to build and operate during 99 years a road in the state of Sonora from Naco, terminating at the Villa de San Marcial, passing through the Cananea mining district, with the right to extend the line to the coast of the Gulf of California, at the mouth of the Yaqui River, and to the ports of Agiabampo or Topolobambo, touching the city of Alimos on the way. The company is authorized to build three branch lines from the main line respectively to Nacozari, Zahuaripa and a point on the Sonora Ry. to be determined later. The whole of the various lines embraced in the concessions must be finished by November, 1910. The Cananea Copper Co., Mr. Greene, Pres., is interested in the railway company.

CONTRACT PRICES.

CEMENT.—Wheeling, W. Va.—Capt. W. E. Craighill, U. S. Engrs., received the following bids on March 23, 1903, for supplying 32,000 barrels of American Portland cement for the Ohio River dams; advertised in Engineering News: Dams Nos 4, 6, 13 and 18—Atlas Portland Cement Co., New York, $2.34 a barrel; Dams Nos. 4 and 6—Castalia Portland Cement, Co., Pittsburg, Pa., $2.42 and $2.37 per barrel, respectively.

BRIDGE.—New York, N. Y.—The following bids were received March 23, 1903, for constructing a bridge and abutment in East 189th St., over the N. Y. & H. R. R.: (1) bid of M. J. Leahy, 1176 Boston road; (2) King Bridge Co., 120 Liberty St.:

		1.	2.
Masonry excavation	200 cu. yds.	$1.00	$1.50
Masonry	350 " "	20.00	15.00
Iron and steel	208,200 lbs.....	.0675	.065
Yellow pine lumber	18,000 ft.,B.M.	50.00	40.00
Hand railing	120 lin. ft..	5.00	3.75
Bridgestones	580 sq. ft...	.65	.70
Earth filling	1,200 cu. yds.	.40	.50
Total		$23,616	$21,155

ASPHALT PAVING, ETC.—Louisville, Ky.—The contract for paving a number of streets in this city has been awarded to the American Standard Asphalt Co. at prices ranging from 87 cts. to $1.01 per sq. yd.

PAVING.—Montreal, Que.—The road committee received the following bids on March 19 for paving and for an asphalt repair plant: Sicily Asphalt Co., granite blocks on concrete, $1.89; asphalt sidewalk, $1.90; Canadian Asphalt Co., asphalt, $2.25; Bellhouse, Dillon & Co., asphalt blocks, $1.70; asphalt sidewalks, $1.75; Barber Asphalt Co., bituminous macadam, $1.74; Canada Asphalt Co., granite blocks between tracks, with 6 ins. of concrete, $1.40; Warren Bros., sidewalks of "Kallo," composition material, $1.46 per sq. yd.; asphalt plant, $13,000.

REPAVING WITH ASPHALT, ETC.—Brooklyn, N. Y.—The following bids were received by the Borough President on March 14 for regulating and repairing with asphalt on concrete foundation in the following streets; (1) bids of Cranford Co., 215 Montague St.; (2) Brooklyn Alcatraz Asphalt Co., Third St. and Third Ave.; (3) Uvalde Asphalt Paving Co., 26 Court St.; (4) Eastern Bermudez Asphalt Paving Co., 26 Court St.; (5) Interstate Paving Co., 44 Court St.; (6) Dan Douglas; (7) Fred. Suck; (8) Jas. P. Graham, 85th St. and 22d Ave.; (9) Dennis Norton:

CONCRETE SIDEWALKS.—Toronto, Ont.—The board of control received bids on March 18 for concrete sidewalks and awarded contracts as follows: Crescent Concrete Paving Co., Markham St., 64½ cts. per sq. ft.; Alexander St., 65 cts.; Gerrard St., $1.15; W. R. Paine, Woolley, 70 cts.; Cumberland St., 87 cts.; W. F. Grant & Co., Brock Ave., 70 cts.; Baldwin St., $1.25; R. A. Rogers & Co., Glen Road, 70 cts.; Berkeley St., 65 cts.; Draper St., 65½ cts.; Berkeley St., 71½ cts.; Bellevue Pl., 68½ cts.; George St., $1.13; George St., $1.13; Harvard & Lennox Paving Co., Richmond St., $1.20; Walmer Road, $1.20.

BIDS RECEIVED AT BROOKLYN, N. Y., MARCH 14, 1903, FOR REPAVING STREETS WITH ASPHALT, ETC.

Raymond St. Quantities.		1.	2.	3.
Asphalt pavement	7,950 sq. yds.	$1.51	$1.50	$1.50
Adjacent pavement	120 " "	.35	.35	.30
Concrete	1,450 cu. yds.	5.67	5.50	6.00
New curb	5,780 lin. ft..	.80	.85	.90
Old curb	310 " "	.35	.35	.35
Manholes	11 each...	14.00	22.50	15.00
Cement sidewalks		...	...	...
Total		$25,155	$25,211	$26,137

York St. Quantities.		1.	2.	3.
Asphalt pavement	7,800 sq. yds.	$1.28	$1.50	$1.75
Adjacent pavement	150 " "	.30	.35	.30
Concrete	1,420 cu. yds.	5.00	5.50	5.50
New curb	5,340 lin. ft..	.80	.85	.80
Old curb	240 " "	.35	.35	.40
Manholes	36 each...	14.00	22.50	15.00
Total		$21,989	$24,995	$26,413

Gates Ave. Quantities.		1.	2.	3.
Asphalt pavement	10,530 sq. yds.	$1.58	$1.50	$1.75
Adjacent pavement	50 " "	.30	.35	.30
Concrete	2,010 cu. yds.	5.75	6.00	5.00
New curb	9,000 lin. ft..	.80	.85	.80
Old curb	820 " "	.35	.35	.40
Manholes	2 each...	14.00	22.50	15.00
Totals		$35,724	$35,854	$37,065

Adams St. Quantities.		1.	3.
Asphalt pavement	2,960 sq. yds.	$1.90	$1.95
Adjacent pavement	30 " "	.35	.30
Concrete	510 cu. yds.	7.00	6.00
New curb	1,380 lin. ft..	.80	.90
Old curb	250 " "	.30	.35
Manholes	7 each...	14.00	15.00
Totals		$10,482	$10,276

DeKalb Ave. Quantities.		1.	2.	3.
Asphalt pavement	23,010 sq. yds.	$1.43	$1.50	$1.75
Adjacent pavement	300 " "	.35	.35	.30
Concrete	4,320 cu. yds.	5.60	6.00	5.50
New curb	18,570 lin. ft.	.89	.85	.85
Old curb	1,370 " "	.35	.35	.40
Manholes	2 each...	14.00	22.50	15.00
Totals		$74,236	$76,849	$80,480

Eighth Ave. Quantities.		1.	2.	3.	5.
Asphalt pavem't..	14,800 sq. yds.	$1.16	$1.30	$1.25	$1.42
Adjacent pavem't.	190 " "	.35	.35	.30	.30
Concrete	2,370 cu. yds.	5.00	5.00	5.00	5.40
New curb	2,510 lin. ft..	.75	.85	.85	.90
Old curb	2,940 "	.30	.35	.30	.30
Manholes	36 each...	14.00	22.50	15.00	15.00
Totals		$32,353	$35,129	$33,963	$37,552

Pacific St. Quantities.		1.	1.	3.
Asphalt pavement..	12,060 sq. yds.	$1.16	$1.35	$1.40
Adjacent pavement.	90 " "	.30	.30	.35
Concrete	2,030 cu. yds.	5.00	5.00	5.00
New curb	5,060 lin. ft..	.80	.80	.85
Old curb	1,260 " "	.35	.40	.35
Manholes	24 each...	14.00	15.00	22.50
Total		$28,902	$31,370	$32,347

Greene Ave. Pavements:		1.	4.	3.	5.
Asphalt	15,850 sq. yds.	$1.27	$1.23	$1.60	$1.40
Adjacent.	140 " "	.30	.30	.30	.30
Concrete ..	2,710 cu. yds.	5.35	5.25	5.25	5.25
New curb .	4,880 lin. ft..	.85	.85	.85	.90
Old curb .	4,130 " "	.35	.35	.30	.30
Manholes .	30 each...	14.00	18.00	15.00	15.00
Totals		$40,683	$39,898	$45,666	$42,540

Nostrand Ave. Quantities.		1.	2.	3.
Asphalt pavement	8,140 sq. yds.	$1.52	$1.50	$1.80
Adjacent pavement	100 " "	.35	.35	.30
Concrete	1,520 cu. yds.	5.67	6.00	5.50
New curb	6,500 lin. ft..	.80	.85	.85
Old curb	350 " "	.35	.35	.40
Manholes	10 each...	14.00	22.50	15.00
Totals		$26,488	$27,237	$28,857

Driggs Ave. Quantities.		1.	2.	4.	3.
Asphalt pavement	12,390 sq. yds.	$1.67	$1.40	$1.49	$1.85
Adjacent pavement	320 " "	.35	.35	.30	.30
Concrete	2,280 cu. yds.	5.75	5.00	5.75	6.00
New curb	8,300 lin. ft..	.85	.85	.85	.90
Old curb	1,460 " "	.35	.35	.35	.40
Manholes	2 each...	14.00	22.50	18.00	15.00
Totals		$41,507	$36,469	$39,269	$44,781

Fourth Ave. Pavement:		1.	2.	3.	5.
Asphalt	85,850 sq. yds.	$1.16	$1.14	$1.25	$1.52
Adjacent.	750 " "	.35	.30	.25	.30
Concrete ..	13,390 cu. yds.	5.00	4.92	5.25	5.25
New curb .	22,800 lin. ft..	.80	.85	.85	.83
Old curb ..	2,630 " "	.35	.40	.40	.52
Manholes .	30 each...	14.00	22.00	15.00	13.50
Excavatn .	14,910 cu. yds.	.40	.50	.50	.45
Filling ...	19,130 " "	1.10	1.00	1.05	1.25
Conc. curb.	23,660 lin. ft..	.55	.55	.55	.60
Sewer bans	125 each...	30.00	40.00	65.00	15.00
Total		$203,149	$229,662	$247,359	$259,819

First Ave.		6.	7.	8.	9.
	1,430 sq. yds.	$0.95	$0.90	$0.90	$0.92
	20 " "	.40	.37	.35	.30
	12,260 cu. yds.	.50	.37	.35	.48
	11,610 lin. ft..	.70	.43	.39	.75
	350 " "	...	...	...	...
	.....	...	...	...	...
	68,280 sq. ft...	.23	.22	.21	.21
	.....	$43,583	$37,455	$36,661	$43,583

Cleveland St.		1.	4.	5.	3.
	3,220 sq. yds.	$1.32	$1.23	$1.42	$1.80
	20 " "	.30	.30	.30	.30
	550 cu. yds.	5.75	5.25	5.50	6.00
	1,290 lin. ft..	.85	.85	.90	.90
	550 " "	.35	.35	.45	.35
	6 each...	15.00	18.00	15.00	15.00
	.....	$8,798	$8,251	$9,102	$10,546

Putnam Ave.		1.	2.	3.
	8,290 sq. yds.	$1.44	$1.50	$1.85
	70 " "	.35	.35	.30
	1,580 cu. yds.	5.67	6.00	5.50
	7,270 lin. ft..	.80	.85	.85
	330 " "	.35	.35	.40
	6 each...	14.00	22.50	15.00
	.....	$26,936	$28,369	$30,449

Harrison St.		1.	2.	3.
	11,950 sq. yds.	$1.17	$1.30	$1.30
	50 " "	.35	.35	.30
	2,060 cu. yds.	5.14	5.00	5.25
	6,640 lin. ft..	.80	.85	.85
	600 " "	.35	.35	.35
	35 each...	14.00	22.50	15.00
	.....	$30,599	$32,494	$32,744

Flatbush Ave.		1.	2.	3.	5.
	15,500 sq. yds.	$1.19	$1.50	$1.60	$1.37
	.....	...	...	...	...
	100 cu. yds.	5.75	6.00	6.00	6.00
	100 lin. ft..	.80	.85	.90	1.00
	200 " "	.35	.35	.35	.50
	.....	...	...	...	...
	.....	$19,170	$24,005	$25,560	$22,035

Herkimer St.		1.	2.	3.	5.
	36,130 sq. yds.	$1.14	$1.40	$1.40	$1.40
	370 " "	.30	.35	.30	.28
	6,040 cu. yds.	5.00	5.50	5.20	5.25
	6,050 lin. ft.	.80	.85	.82	.80
	1,950 " "	.35	.35	.40	.40
	92 each...	14.00	22.50	15.00	15.00
	.....	$86,310	$100,326	$97,422	$98,359

Scholes St.		1.	2.	4.	3.	5.
	15,460 sq. yds.	$1.26	$1.40	$1.23	$1.40	$1.40
	150 " "	.35	.35	.30	.30	.30
	2,650 cu. yds.	5.28	5.00	5.25	5.50	5.25
	7,850 lin. ft..	.80	.85	.85	.90	.90
	970 " "	.35	.35	.35	.30	.40
	44 each...	14.00	22.50	18.00	15.00	15.00
	.....	$40,760	$42,948	$40,777	$44,280	$43,714

Patchen Ave.		1.	4.	2.	3.	5.
	9,860 sq. yds.	$1.26	$1.23	$1.50	$1.45	$1.42
	100 " "	.35	.30	.35	.30	.35
	1,630 cu. yds.	5.35	5.25	6.00	5.25	5.25
	3,850 lin. ft..	.85	.85	.85	.85	.90
	700 " "	.35	.35	.35	.40	.45
	26 each...	14.00	18.00	22.50	15.00	15.00
	.....	$25,060	$24,700	$28,707	$26,827	$26,926

Reid Ave.		1.	2.	4.	3.
	5,600 sq. yds.	$1.60	$1.50	$1.49	$1.90
	70 " "	.35	.35	.30	.30
	1,050 cu. yds.	5.75	6.00	5.75	6.00
	3,860 lin. ft..	.85	.85	.85	.85
	900 " "	.35	.35	.35	.40
	2 each...	14.00	22.50	18.00	15.00
	.....	$18,646	$18,365	$18,034	$20,632

Decatur St.		1.	3.	5.
	6,640 sq. yds.	$1.23	$1.70	$1.40
	40 " "	.35	.30	.30
	1,140 cu. yds.	5.30	5.60	5.25
	2,330 lin. ft..	.80	.90	.90
	1,540 " "	.35	.40	.40
	17 each...	14.00	15.00	15.00
	.....	$16,864	$20,652	$18,261

Warwick St. Pavement:		1.	4.	3.	5.
Asphalt	10,513 sq. yds.	$1.39	$1.18	$1.70	$1.42
Concrete ..	1,472 cu. yds.	5.75	5.22	5.50	5.10
Manholes .	36 each...	14.00	18.00	15.00	15.00
Excavatn .	5,742 cu. yds.	.40	.45	.40	.25
Conc. curb.	7,016 lin. ft..	.55	.60	.60	.60
Flagging:					
Old	2,698 sq. ft...	.35	.35	.30	.28
New	24,812 " "	.05	.05	.03	.04
Total		$38,556	$36,350	$40,539	$35,676

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

DREDGING.—New York, N. Y.—Col. Amos Stickney, U. S. Engrs., received the following bids on March 25 for dredging in the Harlem River, advertised in Engineering News: R. G. Packard Co., 150 Pearl St., 43 cts. per cu. yd.; P. Sanford Ross, Inc., Jersey City, N. J., 33 cts.; Morris & Cummings Dredging Co., 17 State St., 32½ cts.

SEWERS.—Brooklyn, N. Y.—The following bids were received by the Borough President on March 25 for constructing sewers in Foster and Flatbush Aves., East 15th St., Parade Place and Ocean Parkway:

Bids Received at Brooklyn, N. Y., March 25, 1903, for Constructing Brick and Pipe Sewers.

Quantities.		The Abbot-Gamble Co., 39 Park Row.	John J. Creen, Washington St., Bklyn.	Mich'l J. Dady, 350 Fulton St., Bklyn.	J. C. Weschler, Brooklyn.
132-in. brick sewer	550 lin. ft..	$63.00	$50.00	$50.00	$50.00
120-in. " "	3,860 " "	43.50	36.00	44.50	40.00
120-in. concrete and steel sewer	600 " "	49.00	40.00	50.00	37.00
66-in. brick sewer	10 " "	20.00	20.00	20.00	20.00
60-in. " " (Section A)	1,100 " "	9.50	7.00	19.00	15.00
60-in. " " (" B)	50 " "	19.00	20.00	20.00	15.00
54-in. " "	2,670 " "	10.00	7.00	17.00	10.00
48-in. " "	10 " "	10.00	10.00	15.00	10.00
42-in. " "	40 " "	9.50	10.00	13.00	10.00
36-in. " " (egg-shape)	2,650 " "	10.00	5.50	11.00	10.00
36-in. " " (circular)	10 " "	9.50	10.00	10.00	10.00
30-in. " "	1,620 " "	8.50	4.50	8.40	7.00
18-in. pipe sewer, laid in concrete	100 " "	5.00	2.50	4.00	3.00
15-in. " " " "	40 " "	5.00	2.00	3.75	3.00
12-in. " " " "	90 " "	5.00	2.00	3.50	2.00
Manholes—Class A.	1.....	350.00	600.00	200.00	600.00
" — " B	73 each...	75.00	100.00	90.00	60.00
" — " C	3 " ...	65.00	35.00	70.00	50.00.
Receiving basins	9 " ...	100.00	100.00	100.00	150.00
Foundation planking	645,000 ft.,B.M.	26.50	20.00	20.00	20.00
Sheeting and bracing	1,340,000 " "	20.00	20.00	12.00	18.00
Concrete as per specification 61	5 cu. yds.	15.00	5.00	6.50	10.00
Brick masonry as per same specification	5 " "	15.00	10.00	12.00	15.00
Total		$363,218	$289,705	$378,106	$330,915

ASPHALT BLOCK PAVING, REPAVING, ETC.—New York, N. Y.—The following bids were received by the President of the Borough of The Bronx on March 23, 1903, for paving in Brook Ave., with asphalt block on concrete foundation; also, repaving with asphalt block in East 156th St., and for regulating and grading, setting curbstones, flagging, laying approaches and building fences in East 189th and East 188th Sts.: (1) bid of Hastings Paving Co., 25 Broad St.; (2) Continental Asphalt Paving Co., Division St., Long Island City, N. Y.; (3) F. V. Smith Construction Co., 147 East 25th St.; (4) D. W. Moran, 686 Tremont Ave.; (5) C. W. Collins, 166th St. and Webster Ave.; (6) W. F. Murray:

Paving in Brook Ave.

		1.	2.
Asphalt block	15,275 sq. yds.	$1.77	$1.65
Concrete	2,450 cu. yds.	6.00	6.40
New curb	2,500 lin. ft..	1.00	.95
Old curb	5,950 " "	.32	.25
Total		$46,141	$44,746

Repaving in East 156th St.

Asphalt block	8,100 sq. yds.	$1.66	$1.73
Concrete	1,350 cu. yds.	6.00	6.40
New curb	3,250 lin. ft..	1.00	.95
Old curb	2,000 " "	.55	.47
Total		$25,896	$26,680

Improvements in East 189th St.

		3.	4.	5.
Earth excavation	5,900 cu. yds.	.....	$0.60	.....
Rock excavation	8,200 " "	$1.20	1.75	$1.50
Filling	18,700 " "	.40	.23	.50
New curb	5,875 lin. ft..	.75	.70	.70
Flagging	23,550 sq. ft...	.23	.24	.22
Bridgestone	2,050 " "	.60	.60	.55
Rubble masonry	575 cu. yds.	1.50	1.00	1.00
12" stoneware pipe.	100 lin. ft..	1.00	1.00	....
Total		$29,235	$33,860	$32,866

Improvements in East 188th St.

		3.	4.	6.	5.
Earth excavation.	3,900 yds.	.....	.....	$0.70	.....
Rock excavation.	11,750 "	$1.20	$1.75	1.50	$1.50
Filling	14,100 "	.40	.54	.10	.50
Curb	4,450 ft...	.75	.70	.79	.70
Flagging	18,400 "	.23	.24	.25	.22
Bridgestones	750 "	.60	.50	.65	.55
Rubble masonry .	750 yds.	1.50	1.00	2.25	1.00
Stoneware pipe ..	100 ft...	1.00	1.00	1.00	....
Lumber	2,000 "	40.00	25.00	25.00	....
Total		$29,065	$36,983	$32,557	$33,000

CAST-IRON PIPE AND SPECIAL CASTINGS.—Great Falls, Mont.—C. W. Swearingen, Cy. Engr., writes us that the following bids were received on March 23 for furnishing c.-i. pipe and special castings: Great Falls Iron Works (this company is not equipped for the manufacture of c.-i. pipe, but will erect an $8,000 plant to handle the work and for additional facilities), 308 tons of 6-in. pipe at $50 per ton, 96 tons 8-in. at $49.95 per ton, 9,810 lbs. castings at 3½ cts. per lb.; total, $20,539 (awarded contract); Crane Ordway Co., St. Paul, Minn., 6-in., $50.50; 8-in., $50.50; specials, 3½ cts.; total, $20,745.

LAYING WATER MAIN.—New York, N. Y.—The following bids were received by the Department of Water Supply, Gas and Electricity, Park Row Bldg., on March 24 for laying water main in Silver Lane, West Farms Road, Pear Swamp Road and in Victoria St.; all local bidders:

Bids Received at New York, N. Y., March 24, 1903, for Laying Water Mains in Borough of The Bronx.

Quantities.		Fred. N. Lewis.	John Cornwall, Jr.	Pat'k Goodman.	Lloyd Collis.	F. Thiemann, Jr.	Henry Lipps, Jr.
Rock excavation	150 cu. yds.	$4.00	$0.26	$4.00	$2.75	$3.00	$0.25
Earth excavation	3,800 " "	.46	.26	.25	.25	.30	.25
Filling	3,700 " "	.25	.26	.25	.20	.20	.25
12-in. pipe	4,800 lin. ft..	.54	.60	.39	.40	.35	.40
6-in. "	1,000 " "	.36	.30	.27	.25	.20	.20
12-in. stop cocks	4 each...	5.00	10.00	5.00	12.50	15.00	6.00
6-in. " "	16 " ...	3.50	8.00	5.00	10.00	10.00	5.00
Hydrants	8 " ...	7.50	12.00	10.00	12.50	10.00	6.00
Brick masonry	5 cu. yds.	15.00	.02	10.00	12.00	.....	.01
Rubble masonry	5 " "	10.00	.02	2.00	5.00	.....	.01
Stone wall	5 " "	5.00	.02	2.00	2.00	5.00	.01
Macadam pavement	1,650 sq. yds.	.50	.02	1.00	.55	.50	.45
Flagging	10 " "	.40	.02	.10	.01	.50	.01
Curbing	10 lin. ft..	.25	.02	.95	.01	...	.01
Boxing	50 " "	10.00	.02	2.00	5.00	8.00	6.00
Timber	500 ft.,B.M.	35.00	.02	20.00	30.00	50.00	.01
Total		$7,860	$5,468	$6,720	$5,850	$5,790	$5,227

SEWER CONSTRUCTION MATERIAL.—Minneapolis, Minn.—The following bids have been received for material for sewer construction: Andrew Rinker is Cy. Engr.: Brick, J. C. Landers & Co., 100,000 Coon Creek, at $11 per 1,000, June delivery; 500,000 Chaska, at $9.45 per 1,000, June; Menominee Hydraulic Pressed Brick Co., Menominee brick, 50,000 at $10.15 per 1,000, April and May delivery; 1,050,000 at $9.55, June; Excelsior Brick Co., Menominee brick, 1,000,000 at $9.45, June; Wisconsin Red Pressed Brick Co., Menominee brick, 100,000 at $10.15, immediate delivery; 1,000,000 at $9.40; June.—9,000 barrels of native cement, Milwaukee Cement Co., Milwaukee, 82 cts. per barrel; M. Christensen (Austin), cement, 92 cts.; J. C. Landers & Co., Mankato or Attica cement, 90 cts.; S. D. Morrison & Co., Austin cement, 93 cts.; Louisville, $1.—Special castings, 350 tons, Minneapolis Steel & Machine Co., $2.60 per 100 lbs.; Northwestern Foundry Co., $2.60; Standard Foundry Co., $2.70; Murzed & Jeffrey, $2.75.—Clay sewer pipe, (1) J. C. Landers & Co., (2) Ridway Sewer Pipe Co.; 6-in., (1) 9½ cts. per ft., (2) 10 cts. per ft.; 9-in., (1) 16¾ cts., (2) 16½ cts.; 12-in., (1) 31 cts., (2) 30 cts.; 15-in., (1) 45 cts., (2) 42 cts.; 18-in., (1) 63 cts., (2) 60 cts.; 24-in., (1) $1.30, (2) $1.25; 27-in., (2) $1.75; 30-in., (2) $2.10.—Y's, 9-in., (1) 65 cts. each, (2) 66 cts.; 12-in., (1) $1.55, (2) $1.50; 15-in., (1) $2.25, (2) $2.10; 18-in., (1) $3.15, (2) $3; 24-in., (1) $5.85, (2) $5; 27-in., (2) $7.75; 30-in., (2) $8.80.—Curves, 12-in., (1) $1.50 each, (2) $1.30; 15-in., (1) $2, (2) $1.82; 18-in., (1) $2.50, (2) $2.60; 24-in., (1) $4, (2) $4.16.—Slants, 6-in., (1) 28½ cts. each, (2) 30 cts.

CAST-IRON PIPE AND SPECIAL CASTINGS.—Lancaster, O.—The water-works trustees received the following bids on March 25 for 341 tons of c.-i. pipe and 6,000 lbs. of special castings; (1) pipe, (2) castings: U. S. Cast Iron & Foundry Co., Chicago, (1) $30.25 per ton, (2) 3 cts. per lb.; James B. Clow & Sons, Chicago, (1) $30.25 (2) 3 cts.; M. J. Drummond, New York, (1) $30.25, (2) 2¾ cts.; Dimmick Pipe Co., Birmingham, Ala., (1) $31.80, (2) 3 1/8 cts.; National Supply Co., Toledo, O., (1) $30.70, (2) 3 cts.; Reading Foundry Co., Reading, Pa., (1) $31.80, (2) 2 9/10 cts.; Camden Iron Works, Camden, N. J., (1) $32.80, (2) 2¾ cts.; Massillon Iron & Steel Co., Massillon, O., (1) $32.65, (2) 3 cts.

CURBING.—Des Moines, Ia.—Geo. F. Lambert was the lowest bidder on curbing on March 20, his figure being 38¾ cts. per lin. ft.

SEWER.—Des Moines, Ia.—O. P. Herrick was the lowest bidder on 1,200 ft. of 12-in. pipe sewer on March 23, his figure being $1.23 per lin. ft.

JETTY.—Galveston, Tex.—The following bids were received by Col. C. S. Riche, U. S. Engrs., on March 11, for improvements to Galveston Harbor, Aransas Pass and the mouth of the Brazos River: Galveston jetties, J. M. O'Rourke & Co., Galveston, south jetty, $2.59 per ton, north jetty, $3.89 per ton, or a total of $486,250; Aransas Pass jetties, Henry Clay Ripley, Ann Arbor, Mich., $4 per ton on 31,000 tons of riprap; on 24,000 tons of riprap, $4.85 per ton; 7,200 tons of large blocks, $5.35; total, $278,920; Brazos River jetties, Moore & Seibert, Texas City, on 7,000 tons of riprap, $3.14 per ton; 7,500 tons of riprap, $3.95 per ton; 80,000 lin. ft. of logs at 35 cts.; total, $79,605.

CAST-IRON PIPE AND SPECIAL CASTINGS.—Perth Amboy, N. J.—Joseph G. Burns, Supt. City Water-Works, writes us that the following bids were received March 23 for about 1,734 tons of 24-in. c.-i. water pipe and 16 tons of special castings, advertised in Engineering News: (1) pipe, (2) castings.: John Fox & Co., (1) $29.50 per ton, (2) $52 per ton; R. D. Wood & Co., (1) $28.80, (2) $53; U. S. Cast Iron Pipe & Foundry Co., (1) $32.70, (2) $74; Chas. Millar & Son Co., (1) $31.20, (2) $55.

ENGINEERING MATERIAL PRICES

TRACK FASTENINGS—

New York quotations at mill—Steel splice bars, 1.75 to 1.80 cts.; spikes, 1.85 to 2 cts.; bolts, square nuts, 2.65 to 2.70 cts.; hexagon nuts, 2.75 to 2.85 cts.

Chicago—At mill.—Steel splice or angle bars, 2 to 2.25 cts.; spikes, 2.10 to 2.25 cts.; bolts, square nuts, 3½ to 3¾ ins. and larger, 2.85 to 3 cts.; hexagon nuts, 3 to 3.25 cts.

RAILS, STEEL—

New York—At mill.—New, $28 (heavy); girder, $33 to $33.50; old iron, f. o. b. New York, $25 to $25.50; old steel, f. o. b. New York, $21.50 to $22; relayers, $25 to $27.

Chicago—New, $28, standard sections; second quality, $27 (at mill); light rails, $35 to $40, according to weight; old iron, $24 to $24.50; old steel, mixed lengths, $18.50 to $18.75; old steel, long lengths, $22 to $22.25; heavy relaying, $31 to $31.50.

Pittsburg—At mill.—Standard section, $28, in 500-ton lots and over, $29 in carloads, and $30 in small lots; old iron, $25 to $25.50; old steel, $21 to $21.50.

STRUCTURAL MATERIALS—

New York—At tide water.—Beams, 1.75 to 1.95 cts.; channels, 1.75 to 1.95 cts.; tees, 1.80 to 1.85 cts.; angles, 1.75 to 1.85 cts.; zees, 1.75 to 1.95 cts.

Chicago—At mill.—Beams, channels and zees, 15 ins. and under, 1.75 to 1.90 cts.; 18 ins. and over, 1.85 to 2 cts.; tees, 1.80 to 1.90 cts.; angles, 1.75 to 1.90 cts.

Pittsburg—Beams and channels, up to 15-in., 1.60 to 1.80 cts.; over 15-in., 1.70 cts.; tees, 1.60; zees, 1.60 cts.; angles, 3 × 2 up to 6 × 6 ins., 1.60 cts.

PLATES AND SHEETS—

New York—At tide water.—Universal plates, 1.78 to 1.80 cts.; tank, 1.95 cts.; flange, 2.05 cts.; marine, 2.05 cts.; firebox, 2.25 to 2.40 cts.; sheared steel, 1.85 to 2 cts.

Chicago—Universal mill plates, 2 to 2.25 cts.; tank, ¼-in. and heavier, 1.75 to 2 cts.; flange, 1.85 to 2.10 cts.; marine, 1.95 to 2.10 cts.; f. o. b. Chicago, tank, ¼-in. and heavier, 2.15 to 2.20 cts.; tank, 3-16-in. 2.25 to 2.30 cts.; No. 8, 2.30 to 2.40 cts.; flange, 2.40 to 2.50 cts.; sheets, black and galvanized, No. 20, 2.60 to 2.65 cts.; Nos. 22 to 24, 2.65 to 2.75 cts.; No. 26, 2.75 to 2.85 cts.; No. 27, 2.85 to 2.95 cts.; No. 28, 2.95 to 3.05 cts.

Pittsburg, f. o. b.—Universal mill and sheared plates, 1.65 to 1.85 cts.; tank, ¼-in. and heavier, 100 ins. wide, 1.60 cts. at mill, Pittsburg; flange and boiler steel, 1.70 cts.; locomotive firebox, 2.10 to 3 cts.; marine ordnance firebox, 1.80 cts.; still bottom, 1.90 cts.; locomotive firebox, 2.10 to 3 cts.; sheets, Nos. 22 and 24, box annealed, 2.45 cts.; No. 26, 2.55 cts.; No. 27, 2.65 cts.; No. 28, 2.75 cts.; galvanized sheets, No. 27, 3.60 cts.; No. 28, 3.85 cts.

MERCHANT STEEL—

Chicago—At mill.—Machinery, finished, 2.01½ to 2.11½ cts.; tire, smooth finished, 1.96½ to 2.11½ cts.; spring, open-hearth, 2.66½ to 2.76½ cts.; tool, crucible, ordinary grades, 6½ to 8 cts.; specials, 12 cts. up.

Pittsburg—At mill.—Steel bars, 1.60 cts.

IRON—

Pig Iron:

New York—Northern foundry, No. 1, X, $24 to $25; No. 2, X, $22 to $23; Gray forge, $20.50 to $21; Southern foundry, No. 1, $23.50 to $24.50; No. 2, $21.75 to $23; No. 3, $21 to $22; No. 4, $20 to $21; soft, No. 1, $23.50 to $24; No. 2, $21 to $22.

Chicago—f. o. b. Chicago.—Lake Superior charcoal, $26.50 to $27.50; local coke foundry, No. 1, $23 to $24; No. 2, $22.50 to $23; No. 3, $22 to $22.50; local Scotch, No. 1, $24 to $25; Ohio strong softeners, No. 1, $26.30 to $27.50; Southern Silvery, $24.35 to $26.35; Southern coke, No. 1, $23.35 to $23.85; No. 2, $22.35 to $22.85; No. 3, $21.35 to 21.85; No. 1, soft, $23.35 to $23.85; No. 2, soft, $22.35 to $22.85; foundry forge, $20.85 to $21.35; Southern Gray forge, $19.85 to$20.35; mottled, $19.35 to $19.85; charcoal softeners, $25.85 to $27.85; Alabama and Georgia car wheel, $28.35 to $28.85; malleable Bessemer, $22.50 to $23.50; standard Bessemer, $22.50 to $23.50; Jackson county and Kentucky Silvery, 6 to 8% silicon, $31.30 to $32.30.

Pittsburg—Basic and Bessemer, at furnace, third quarter, $20.50; delivery three months, $21; forge iron, $21 to $21.25; Southern and Virginia brands, $20.50 to $20.75.

Bar Iron:

New York—Refined, on dock, 1.85 to 1.90 cts.; common, on dock, 1.75 to 1.80 cts.

Chicago.—f. o. b. Chicago, mill shipment, 1.80 to 1.90 cts.; soft, 1.76½ to 1.86½; hoops, 2.16½ to 2.26½ cts.; angles, under 3 ins., 1.86½ to 1.91½ cts., base

Pittsburg.—1.89¾ cts., in carload lots; 1.95 cts. in small lots.

GENERAL MATERIALS—

Lead, spot, New York, 4.67½ cts.; St. Louis, 4.55 to 4.57½ cts.

Spelter, New York, spot and March, 5.75 cts.; April and May, 5.65 cts.

Copper, spot to May, standard, 13.75 cts.; Lake, 14.75 to 15 cts.; electrolytic, 14.75 to 15 cts.; casting, 14.50 to 15 cts.

LUMBER—

New York:

Hemlock, Penn., joists, 12 to 40 ft., $16.50 to $24.50 per M.; boards, 13 to 16 ins., $17.50 to $18.50.

Spruce, Eastern, delivered New York, $20 to $23; random cargoes, narrow, $18 to $19; wide, $20 to $22; piling, Eastern, 5½ cts.

Yellow pine, random cargoes, sail deliveries, N. Y., $23 to $24.

INDUSTRIAL NOTES.

PHILLIPS & WORTHINGTON, Engineers, will move on May 1 from 11 Broadway to 136 Liberty St., Electrical Exchange, New York.

THE PRESSED STEEL CAR CO. has removed its general offices from the Tradesmen's Bldg. to the Farmers' Bank Bldg., 5th Ave. and Wood St., Pittsburg.

THE BUFFALO FORGE CO. announces the removal of its Pittsburg office from the Fitzsimmons Bldg. to 607 House Bldg. The office is in charge of Mr. H. D. Wilson, M. E.

THE HELWIG MFG. CO., St. Paul, Minn., has added to its line of reversible pneumatic motors a No. 2 end spindle for metal work; also a wood boring motor, end spindle, both reversible.

THE COLUMBUS ROLLING STEEL SHUTTER CO., of Columbus, O., has a contract for rolling steel shutters to be applied to the core ovens of the new foundry at the works of the Lane & Bodley Co., Cincinnati, O.

THE ELECTRIC FIREPROOFING CO., 19th St. and East River, New York, is furnishing the fireproofed wood for the Blair Bldg., Broad St. and Exchange Pl., New York, now being built by the Andrew Robinson Co. Carrere & Hastings are the architects.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

THE DEMING CO., Salem, O., has completed its new power pump building. The building covers a space of 86 × 226 ft. It is equipped with electric traveling cranes along the center from end to end, the motor driving large machinery being placed along one side and the line shafting along the other. A testing tank occupies the center of the building opposite a transept connecting with the warehouse.

THE M. GARLAND CO., Bay City, Mich., have just shipped a second car of sawmill machinery to Revelstoke, B. C., including a special gang edger. One side of this machine is a regular Garland three-saw edger and the other side is a gang of ten saws set 1 in. apart with separate feed rolls, so that a cant 6 × 12 ins. can be run through the machine and made into 6-in. strips at one operation. By special collars this gang can be changed to a five-saw gang to make 2 × 4 and 2 × 6 from the cant. The company is building an 8-ft. spring tension band mill with special guide which is raised and lowered by friction for the Sprague mill at Kingman, Me.

PUBLICATIONS RECEIVED.

RAILROAD CONSTRUCTION.—Theory and Practice. A Text-Book for the Use of Students in Colleges and Technical Schools. By Walter Loring Webb, C. E., Assoc. M. Am. Soc. C. E., sometime Assistant Professor of Civil Engineering in the University of Pennsylvania. Second Edition, Revised and Enlarged. New York: John Wiley & Sons. London: Chapman & Hall. Leather; 4½ × 6¾ ins.; pp. 675; tables, folding plates and 217 figures in the text. $5.

CATALOGUE OF THE LIBRARY OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS.—Vol. II., December, 1902. Prepared by the Secretary, under the direction of the Library Committee. New York: The Society. Paper; 6 × 9 ins.; pp. 293.

NATURAL AND ARTIFICIAL SEWAGE TREATMENT.—By Lieut.-Col. Alfred S. Jones, V. C., Assoc. M. Inst. C. E., and H. Alfred Roechling, M. Inst. C. E. London: E. & F. Spon. New York: Spon & Chamberlain. Cloth; 6 × 9 ins.; pp. 96; tables. 3½ shillings, net; in the United States, $1.40, net.

TRADE PUBLICATIONS.

FIREPROOF PAINT.—National Fireproof Paint Co., 40 Dearborn St., Chicago. Paper; 5¼ × 7½ ins.; pp. 36.

The advantages of fireproof paints are set forth and the company's various grades of paint are described. Prices are given and there are samples of the various colors supplied.

SOME NOTABLE TRAINS.—Baldwin Locomotive Works, Philadelphia, Pa. No. 41 in the series entitled "Record of Recent Construction." 9 × 6 ins.; pp. 35.

This pamphlet contains illustrations and descriptions of a number of famous railway trains, all of them drawn by Vauclain compound locomotives. Several of these locomotives used for fast and heavy express service have over 3,000 sq. ft. of boiler heating surface. There is also a Lehigh Valley Consolidation locomotive with 4,165 sq. ft., which hauls trains weighing 1,000 tons behind the tender over grades of 66 ft. per mile.

Mail Delivery Notice.

The first pages of Engineering News go to press on Monday each week, and the last pages, including "Wants," "Proposals" and "For Sale" cards, about Wednesday noon. All papers for Boston, Philadelphia, and Greater New York should be received **Thursday morning.** All places East of the Mississippi should be reached by Friday afternoon.

If your paper is not received promptly, make a complaint in writing to your local post-office officials. This will cause an investigation, and the complaint will finally reach the office where the delay occurs.

SEWERS, ETC.

Village of Canajoharie, N. Y.

Sealed proposals for the construction of Sewers and Sewer Appurtenances and for furnishing materials for the same, in the Village of Canajoharie, N. Y., will be received at the office of the Board of Trustees of said Village until three (3) o'clock p. m. of the 8th day of April, 1903.

Bids must be endorsed with the name and address of the contractor making the same and be marked "Proposals for the Construction of Sewers in the Village of Canajoharie N. Y.," and must be addressed to the "President of the Village of Canajoharie, N. Y."

Each proposal must be accompanied by cash, or by a New York draft for One Thousand ($1,000) Dollars (payable to the order of the Treasurer of the Village of Canajoharie) pursuant to the provisions of Section 266 of The Village Law—being Chapter 414 of the Laws of 1897.

Proposals shall be made for the entire work, on the blanks furnished by the Village, and shall state a lump sum for the estimated quantities of work, also a schedule price for each separate item of work.

The prices are to cover all the expenses for furnishing of materials, tools, implements, labor, and all incidentals necessary to complete the work in conformity with the plans, contract and specifications prepared for same.

Plans and specifications are furnished by the Village, and are on file at the office of the Board of Trustees of said Village.

The Board of Trustees reserves the right to reject any or all bids. 13-2t

VIADUCT.

Office of the Grade-Crossing Commissioners, Room No. 436, Ellicott Square Building, Buffalo, N.Y., March 30, 1903.

Sealed proposals for work and material as set forth below will be received at the office of the Engineer of the Grade-Crossing Commission until 11 o'clock a. m., April 11th, 1903.

No proposal will be considered unless it be accompanied by a certified check, payable to the order of R. B. Adam, chairman Grade-Crossing Commissioners, in the amount of five thousand ($5,000) dollars, for the Substructure and two thousand ($2,000) dollars for the Superstructure.

Plans and specifications can be seen and printed forms of proposals, instructions to bidders, and any desired information can be had, on application at the office of the Grade-Crossing Commissioners, Room No. 436, Ellicott Square Bldg., on and after this date.

Proposals must be made for the work and material as indicated on the plans and specifications on file.

The right to reject any and all proposals is reserved.

SUBSTRUCTURE.

For masonry, paving and other work necessary for constructing piers, abutments of and approaches to a viaduct over the Erie Railroad in Perry St.

SUPERSTRUCTURE.

For the construction and erection of the Superstructure for a viaduct over the above-named railroad in Perry St.

Separate proposals will be received for both Substructure and Superstructure.

Proposals will be received by the Chief Engineer of the Grade-Crossing Commissioners, at his office, No. 436 Ellicott Square, Buffalo, N. Y.

C. M. MORSE,
14-1t Deputy Engineer Commissioner.

DRAINAGE WORK.

Tomah, Wis.

Sealed proposals will be received by the Lemonweir River Drainage District of Monroe and Juneau counties, Wisconsin, up to 8 a. m. of the 15th day of May, 1903, for the digging of the mains and laterals of said district. Each bid must be accompanied by a certified check for 5% of bid. The right to reject any and all bids is expressly reserved. Plans may be seen and specifications obtained by application to WM. S. FRYER,
14-3t Tomah, Wis.

SEWERS.

Amsterdam, N. Y.

Proposals will be received until 8 p.m., April 15th, for furnishing all materials and constructing 550 ft. of Sewers on East Main St., sizes 27 and 18 ins.; average cut, 11 ft. in rock. Also, 1,000 ft. of Sewers on Guy Park Ave., sizes 15 and 8 ins.; cut, 8 ft. in rock. Each proposal to be accompanied by a bond or certified check in the amount of $300. F. E. CRANE,
14-1t Superintendent of Sewers.

LAYING CAST-IRON WATER PIPES, ETC.

Falmouth, Mass., March 27, 1903.

The Town of Falmouth, Mass., will receive proposals for laying Cast-Iron Water Pipes, setting hydrants, gates, gate boxes, etc., for extensions of the water mains of about 3½ miles, until 7 p.m., Friday, April 10, 1903. Specifications and blank forms of proposal can be obtained by intending bidders upon application to the Engineer, at 101 Tremont St., Boston, Mass.

JOHN H. CROCKER,
JAMES T. WALKER, M.D.,
GEORGE E. DEAN,
Water Commissioners.
LOUIS E. HAWES, Engineer. 14-1t

PAPER MILL.

Quebec, Can.

Proposals will be received at the office of Geo. F. Hardy, Architect and Engineer, 309 Broadway, New York City, for furnishing material and labor required for the Construction of a plant for the Manufacture of Paper Pulp, at Seven Islands, Quebec, for the North Shore Power Railway & Navigation Co.

The dam and principal structures are to be of concrete, which, together with the ledge excavation, will amount to approximately 50,000 cu. yds.

Full information may be obtained upon application at the above office or at the company's office, No. 7 West 22d St., New York.
12-3t

U. S. ENGINEER OFFICE, Army Building, New York, March, 24, 1903.—Sealed proposals for furnishing and delivering Cement and Broken Stone at Fort Hamilton, N. Y., will be received here until 12 m. April 8, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs. 13-2t

U. S. ENGINEER OFFICE, Army Building, New York, March 24, 1903.—Sealed proposals for furnishing material and building a Riprap Bulkhead southwest of Governor's Island, New York Harbor, will be received at this office until 12 m. April 23, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs. 13-4t

U. S. ENGINEER OFFICE, Nashville, Tenn., March 18, 1903.—Sealed proposals for construction, delivery, etc., of 4 pairs Steel Lock Gates, Filling Valves, etc., for Locks A and No. 1, Cumberland River, will be received here until 11 a. m., standard time, April 22, 1903, and then publicly opened. Information furnished on application. M. B. ADAMS, Lieut.-Col., Engrs. 12-4t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., April 1, 1903.—Sealed proposals for Dredging in Narrows of Lake Champlain, Vt., and Plattsburg Harbor, N. Y., will be received here until 12 m., May 1, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Captain, Engrs. 14-4t

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., March 31, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 6th day of May, 1903, and then opened, for the construction (except heating apparatus and electric wiring and conduits) of the U. S. Post Office at Norwich, Connecticut, in accordance with the drawings and specifications, copies of which may be had at this office, or the office of the Postmaster at Norwich, Conn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 14-2t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., March 20, 1903.—Sealed proposals for Dredging in Beverly and Manchester harbors, Mass., will be received here until 12 m., April 20, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt., Engrs. 13-4t

U. S. ENGINEER OFFICE, Army Building, New York, March 20, 1903.—Sealed proposals for furnishing and delivering Cement and Broken Stone at Fort Wadsworth, N. Y., will be received here until 12 m., April 6, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs 13-2t

U. S. ENGINEER OFFICE, Winthrop Bldg., Boston, Mass., March 25, 1903.—Sealed proposals for furnishing Portland Cement, Sand and Broken Stone, will be received here until 12 m., April 25, 1903, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt., Engrs. 13-4t

U. S. ENGINEER OFFICE, New London, Conn., March 23, 1903.—Sealed proposals, in triplicate, for Dredging in Quinnipiac and Mill rivers, New Haven Harbor, Conn., will be received here until 12 noon, April 23, 1903, and then publicly opened. Information on application. CHAS. F. POWELL, Maj., Engrs. 13-4t

U. S. ENGINEER OFFICE, Army Building, New York, March 19, 1903.—Sealed proposals for Dredging in Buttermilk Channel and in Gowanus Creek, New York Harbor, will be received here until 12 m., April 20, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs. 12-4t

U. S. ENGINEER OFFICE, Duluth, Minn., March 12, 1903.—Sealed proposals for furnishing 6,000 bbls. Portland Cement for Concrete Superstructure to Breakwater at Marquette, Mich., will be received here until noon, April 11, 1903, and then publicly opened. Information on application. D. D. GAILLARD, Capt., Engrs. 12-4t

U. S. ENGINEER OFFICE, 2001 I St. N.W., Washington, D. C., March 13, 1903.—Sealed proposals for furnishing and placing Riprap Stone in dikes in Occoquan Creek, Va., will be received here until 12 o'clock noon, April 14, 1903, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lieut.-Col., Engrs. 12-4t

U. S. ENGINEER OFFICE, 537 Congress St., Portland, Me., March 14, 1903.—Sealed proposals for Dredging in Camden Harbor, Me., will be received here until 12 m., April 14, 1903, and then publicly opened. Information furnished on application. S. W. ROESSLER, Maj., Engrs. 12-4t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., March 12, 1903.—Sealed proposals for Extension of West Breakwater at Petoskey, Mich., will be received here until 3 p. m., April 11, 1903, and then publicly opened. Information furnished on application. CHARLES KELLER, Capt., Engrs. 12-3t

U. S. ENGINEER OFFICE, Army Building, New York, N.Y., March 16, 1903.—Sealed proposals for Dredging at Port Chester, Mamaroneck, Bronx River, Eastchester Creek, Port Jefferson, Huntington, Flushing Bay, and repairing Stone Breakwater at Glencove, N. Y., will be received here until 12 m., April 15, 1903, and then publicly opened. Information furnished on application. AMOS STICKNEY, Col., Engrs. 12-4t

DEPARTMENT OF THE INTERIOR, Washington, March 21, 1903.—Sealed proposals, in duplicate, will be received at this Department until 3 o'clock p. m., Monday, April 6, 1903, and will be opened immediately thereafter, for installing or placing in position in the buildings of the Government Hospital for the Insane, Washington, D. C., an electrical fire-alarm apparatus, including thermostats, registering and signal stations and central recording equipment complete, according to the system bid upon. Bidders must describe fully the system proposed to be installed, and as far as practicable illustrate it by models showing method of operation; references must also be supplied of the person, corporation, institution or municipality where the system has been installed and is in actual operation. The terms of installation should clearly indicate whether it is on the basis of reimbursement for first cost of equipment with annual rental thereafter, or sale outright, with no annual rental. It is desirable that bidders give a rate of cost based on the number of thermostats, signal stations, and recording stations used in the equipment of the system bid upon. A certified check for 2% of the aggregate amount of the bid payable to the order of the Secretary of the Interior, must accompany each proposal. The right is reserved to reject any and all bids to accept one part and reject the other, as the interests of the service may require. Bidders are invited to be present at the opening. E. A. HITCHCOCK, Secretary. 13-2t

U. S. ENGINEER OFFICE, Portland, Ore., March 25, 1903.—Sealed proposals will be received here for 475,000 tons, more or less, Stone for Extension of Jetty at mouth of Columbia River, Oregon and Washington, until 11 a. m., April 30, 1903, and then publicly opened. Information on application. W. C. LANGFITT, Capt., Engrs. 13-3t 17-1t

U. S. ENGINEER OFFICE, Duluth, Minn., Mar. 25, 1903.—Sealed proposals for furnishing 7,000 cu. yds. Broken Stone and 4,000 cu. yds. Sand for concrete superstructure to breakwater, Marquette, Mich., will be received here until noon, April 24, 1903, and then publicly opened. Information on application. D. D. GAILLARD, Capt., Engrs. 13-4t

OFFICE OF THE ENGINEER IN CHARGE IMPROVEMENT OF THE PORT.—Manila, P. I., February 15, 1903.—Sealed proposals for constructing an additional Breakwater at Manila, P. I., will be received at this office until 11 o'clock a. m., June 15, 1903, and then publicly opened. Work to be done includes about 450,000 tons of 2,240 lbs. each, of rock filling, in water of approximately 30 ft. depth. Bids must be accompanied by a bond of $50,000 U. S. currency. One contract will be made for the whole work. Contractor's bond will be for 10% of the amount bid. The right is reserved to reject any or all bids. For specifications and blank forms, apply to this office, the U. S. Engineer Office, Room "H," Army Bldg., New York City, N. Y.; the U. S. Engineer Office, 1637 Indiana Ave., Chicago, Ill.; or the U. S. Engineer Office, Room 41, Flood Bldg., San Francisco, Cal. CLINTON B. SEARS, Major, Corps of Engrs., U. S. Army, in Charge. 11-9t

WILMINGTON, DEL., March 3, 1903.—Sealed proposals for constructing jetty at mouth of Mispillion River, Del., will be received here until 12 o'clock, noon, April 2, 1903, and then publicly opened. Particulars on application. JARED A. SMITH, Colonel Engrs. 11-3t

U. S. ENGINEER OFFICE, Mobile, Ala., March 10, 1903.—Sealed proposals for Dredging in Harbor at Biloxi, Miss., will be received at this office until 12 noon, April 9, 1903, and then publicly opened. Information furnished on application. SPENCER COSBY, Captain, Corps of Engrs. 11-4t

NOTE the new advertisements pages XXVI to XXIX.

YOU MAY BE INTERESTED IN SOME OF THEM

LIFT BRIDGE PLANS.

NOTICE TO BRIDGE ENGINEERS.

Saginaw, Mich.

The Board of Public Works of the City of Saginaw, Mich., will receive until 7:30 p.m., on Thursday, April 16th, 1903, at its office in the City of Saginaw, Mich., competitive plans for a Lift Bridge.

From the accepted plan will be constructed a bridge across the Saginaw River, in the City of Saginaw, Mich., said river being a navigable stream, and under control of the Engineering Department of the U. S. A.

The engineer or bridge company furnishing the plan that is accepted by the Board of Public Works and approved by the Common Council, will be paid therefor the price named in his proposal.

One-third to be paid when design is accepted; one-third to be paid when complete detail plans for foundation and shop drawings are furnished and approved by the Board of Public Works; one-third when the bridge is completed and accepted and the workings thereof satisfactorily demonstrated to the Board of Public Works.

For the second best design the owners will be paid the sum of $300.00.

For the third best design the owner will be paid the sum of $200.00.

The owner of the accepted design, if the same is covered by letters patent or otherwise, shall furnish the Board of Public Works evidence of the fact, and that he has the right to sell same, and that the price bid for furnishing the design and complete detailed plans and specifications therefor, also includes to the Board of Public Works for the City of Saginaw, the right to acquire and own such plans and specifications, and the right to construct a bridge at Genesee Ave. across the Saginaw River, in accordance therewith, and to maintain and operate the same.

Each competitor shall furnish:

Complete strain sheets, plans and specifications for the bridge and foundations and such full detail drawings as will clearly show the dimensions of all parts, manner of construction, and the sectional area, also the dead load or weight assumed in the calculations;
The cubic yards of masonry;
The tons of metal classified as to machinery, floor system and main girders;
Number and length of piles;
Feet, B. M., timber, substructure and superstructure separately;
Number of motors and electrical HP.;
Estimated cost of complete substructure and superstructure;
Style of bridge shall be a full deck;
Plans shall provide for a clear water way of 90 ft. between abutment protections when bridge is open for the passage of boats;
For a clear roadway of 40 ft.;
For two sidewalks, of 8 ft. in the clear;
For double street car tracks laid 9.5 ft. center to center;
A uniformly distributed moving load of 80 lbs. per sq. ft. of clear sidewalks, and 100 lbs. per sq. ft. of clear roadway outside of the cars;
Two 80,000-lb. motor cars, 40 × 8½ ft., having a wheel base for each truck of 6 ft. and 20 ft. center to center of trucks passing on the bridge;
Each arm or leaf of the bridge is to be figured as a cantilever, and no part of the load is to be figured as transmitted from one leaf to the other through the lock;
In the proportioning of the structure, Cooper's 1901 specifications for city highway bridges to be complied with; soft steel to be used throughout;
Sidewalks to be planked with 2-in. yellow pine;
Roadway to be planked with 3-in. white oak and 3-in. yellow pine;
For two motors connected, so that they can be operated by one operator for each arm of the bridge, together or separately;
For each arm of the bridge to be operated by hand power;
The masonry will be so designed so as to transmit 75% of the full load of each arm in any position to an area on piles of ¼ of the total width on each side of the center line of gravity of pier.

Plans shall be furnished on tracings 24 × 36 ins. in size, machinery drawings to be proportionately large to show all details.

The Board of Public Works and the City Engineer will decide on the competitive plans, and the awards wil be made in accordance therewith.

Any plan not substantially in compliance with the conditions above stated will not be considered.

Particular attention of competitors is called to the importance of a design that will give the least space between high water and the grade of roadway, and all elevations shown on plans must be with reference to city datum.

All information as to the elevation of low water, high water, present bridge, bottom of the river at site of lift spans, water soundings, mud soundings, cost of materials, etc., will be furnished by R. W. Roberts, City Engineer for the Board of Public Works.

By order of the Board of Public Works.

M. L. DeLAND, President.
W. H. BARTON, Clerk of the Board. 14-2t

SEWER SYSTEM.

Cape May, N. J., Mar. 24, 1903.

Sealed proposals will be received by the City Council of the City of Cape May, N. J., in council assembled, on Tuesday, April 28, 1903, at 8 o'clock p. m., for the construction of a Sewer System, approximately three miles in length.

Each bid must be accompanied by a certified check of $1,000, payable to the City Treasurer of the City of Cape May, as a guarantee that the contract will be entered into if the bid is accepted. A surety bond of $24,000 will be required of the contractor.

Plans and specifications can be had upon application to Jno. W. Thompson, Recorder of the City of Cape May, N. J., at a charge of $10, which said sum will be refunded upon the return of the plans and specifications within thirty days after the letting. Proposals must be enclosed in sealed envelopes, and each must have plainly written upon it "Proposals," and a statement also of the portion of the work for which it is a proposal.

For further information, apply to Jno. W. Thompson, Recorder of the City of Cape May, N. J.

JOHN HALPIN,
Attest: President of Council.
JNO. W. THOMPSON, Recorder. 13-5t

BEACH DRIVE, BULKHEAD AND BOARDWALK.

Cape May, N. J., Mar. 24, 1903.

Sealed proposals will be received by the City Council of the City of Cape May, N. J., in council assembled, on Tuesday, April 28, 1903, at 8 o'clock p. m., for the construction of a Beach Drive, a Bulkhead and a Boardwalk, approximately 12,500 ft. in length.

Each bid must be accompanied by a certified check of $1,000, payable to the City Treasurer of the City of Cape May, as a guarantee that the contract will be entered into if the bid is accepted. A surety bond of $25,000 will be required of the contractor.

Plans and specifications can be had upon application to Jno. W. Thompson, Recorder of the City of Cape May, N. J., at a charge of $10, which said sum will be refunded upon the return of the plans and specifications within thirty days after the letting. Proposals must be enclosed in sealed envelopes, and each must have plainly written upon it "Proposals," and a statement also of the portion of the work for which it is a proposal.

For further information, apply to Jno. W. Thompson, Recorder of the City of Cape May, N. J.

JOHN HALPIN,
Attest: President of Council.
JNO. W. THOMPSON, Recorder. 13-5t

CURB, GUTTER AND GRADE.

Hasbrouck Heights, N.J., March 23, 1903.

Proposals will be received by Mayor and Council, Monday, April 6, 8 p. m., at Pioneer Hall, Hasbrouck Heights, for following work on Summit St.:

About 350 cu. yds. of excavation;
1,982 lin. ft. 4 × 20" bluestone curb;
550 sq. yds. cobble gutter.

Certified check for $200 must accompany bids.

Plans and specifications at office of Lemuel Lozier, Trust Bldg., Hackensack, N. J.

Right is reserved to reject any or all proposals.

G. H. RAMSDEN,
13-2t Borough Clerk.

BRIDGE NOTICE.

Department of Public Works, Fredericton, N. B., Can., March 30, 1903.

Sealed tenders, marked "Tender for Superstructure of Oromocto Bridge," will be received at the Department of Public Works, Fredericton, until Monday, 18th day of May, 1903, at noon, for building the Steel Superstructure of Oromocto "Highway Bridge," Parish of Lincoln, Sunbury county, N. B., according to plans and specifications to be seen at the Public Works Department, Fredericton, N. B. The structure consists of one through fixed truss span of 97 ft. 4½ ins. from face to face of masonry walls, and one through swing draw span of 215 ft. 6 ins. from face to face of masonry walls.

Each tender must be accompanied by a certified bank check or cash for an amount equal to 5% of the tender, based on the limit weight of metal and the rate per lb., which will be forfeited if the party tendering declines to enter into contract when called upon. Should the tender be not accepted the deposit will be returned. Two good sureties must be named in each tender. Not obliged to accept lowest or any tender.

C. H. LaBILLOIS,
14-1t Chief Commissioner.

HARBOR IMPROVEMENTS.

The Government of Jamaica is prepared to receive tenders for the Improvement of the Harbor of Falmouth, in the Island of Jamaica, in the manner hereinafter described.

The work to be executed under the proposed contract consists of the excavation and removal of

(1) The submerged rock in the entrance to the said harbor, known as the "Triangular Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(2) Two spurs of the main reef on the west side of the said entrance, back to a line fifty (50) feet distant from and parallel to a line running S. 35° W. from the center of the said Triangle Rock, and to a depth of five (5) fathoms below low water of Spring Tides.

(3) The submerged rock on the east side of the ship channel into the harbor, known as the "Hopewell Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(4) The submerged rocks in the side harbor, known as the "Inner Shoal" and the "Middle Shoal," respectively, to a depth of five (5) fathoms below low water of Spring Tides.

(5) The submerged rock in the harbor known as the "Harbor Rock," to a depth of four (4) fathoms below low water of Spring Tides.

The following will be the conditions of the proposed contract:

1. The work shall be so executed and completed that after its completion there shall be at all points inside the five (5) fathom line enclosing the harbor its ship channel and entrance, a depth of not less than (5) five fathoms below low water of the Spring Tides.
2. The contractor shall not deposit or allow to be deposited any solid matter in any part of the harbor where the depth of water is now less than five (5) fathoms at low water of Spring Tides, and shall remove at his own expense such matter, if any, as shall be so deposited through any act of his or of any of his servants or agents.
3. Payment will be made to the contractor at such times and in such manner as shall be agreed upon before signing the contract.
4. Plant, tools and materials to be used exclusively for the purposes of this contract will, if consigned to the Director of Public Works and kept under the supervision and in accordance with the regulations of the Revenue Department, be admitted free of import duty.
5. The whole of the work included in the contract shall be completed within six months after the date of the contract, and as time is of the essence of the contract, there shall be a deduction made from the contract sum of £5 for every day in excess of the contract time, as liquidated damages and not in the nature of a penalty.
6. The contractor and two approved sureties will be required to enter into a joint and several bond to His Majesty the King for a sum of £1,000 for the due performance of the contract.

All the information on the subject of the harbor and the work to be done possessed by the Government of Jamaica may be obtained at the Office of the Director of Public Works in Kingston, Jamaica, but the Government will not guarantee the accuracy of any such information, nor be held responsible should the contractor suffer loss or injury through incorrect or insufficient information.

The rock to be excavated is believed to be chiefly, if not entirely, of coral formation, and the cubic contents of the excavation to be done has been estimated as follows, that is to say:

Triangle rock	300	cu. yds.
Spur No. 1.....	550	" "
Spur No. 2.....	400	" "
Hopewell Rock	1,500	" "
Middle Shoal	7,500	" "
Inner Shoal	5,700	" "
Harbor Rock	500	" "
Total.....	16,450	" "

Tenders must be delivered at the office of the Director of Public Works, Kingston, Jamaica, West Indies, in sealed envelopes, addressed to him and marked outside "Tender for Falmouth Harbor Improvement," on or before the 20th day of May, 1903. 12-6t

NOTICE TO TUNNEL CONTRACTORS.

Sealed proposals, marked "Bid for Tail-Race Tunnel," will be received by the undersigned until noon, May 11th, 1903, for the construction of a Tail-Race Tunnel for the Toronto & Niagara Power Co., of Toronto, Ontario. Plans and specifications for this work are on file and can be seen after March 30th, 1903, at the Company's offices, at Home Life Building, Toronto, Ontario, and Niagara Falls, Ontario, or office of F. S. Pearson, No. 29 Broadway, New York, Room 220. The right is reserved to reject any or all proposals.

FREDERIC NICHOLLS,
Vice-President and General Manager,
14-6t Home Life Bldg., Toronto, Ontario.

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., March 26, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 4th day of May, 1903, and then opened, for the construction (including plumbing, electric wiring and conduits) of the extension of the U. S. Custom House, Court House, and Post Office at Memphis, Tenn., in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Custodian at Memphis, Tenn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 14-2t

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., March 26, 1903.—Notice is hereby given that the time for opening the bids for the completion of the U. S. Post Office building at Richmond, Ky., has been extended from April 8, 1903, to 3 o'clock p.m. April 27, 1903. JAMES KNOX TAYLOR, Supervising Architect. 14-1t

TREASURY DEPARTMENT.—Office of the Director of the Mint, Washington, D. C., March 25, 1903.—Sealed proposals will be received at this office until 2 o'clock p. m., on the 28th day of April, 1903, and then opened, for the installation of an Electric Light and Power Plant in the U. S. Mint building, Denver, Colo. Copies of the specification may be obtained at this office, at the discretion of the Director of the Mint. R. E. PRESTON, Acting Director of the Mint. 14-4t

PROPOSALS FOR FURNISHING UNDERGROUND TELEGRAPH AND TELEPHONE CABLES.—Office of the Commissioners of the District of Columbia, Washington, D.C., March 24, 1903.—Sealed proposals will be received at this office until 12 o'clock m., April 4, 1903, for furnishing Underground Signal and Telephone Cables for the fire alarm and police telegraph and telephone service in the District of Columbia. Separate bids will be considered for the several items enumerated. Specifications and blank forms of proposals may be obtained at this office. HENRY B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners of the District of Columbia. 14-1t

PROPOSALS TO CLEAN STREETS, AVENUES AND ALLEYS IN THE DISTRICT OF COLUMBIA, will be received at the office of the Commissioners, 464 Louisiana Ave., Washington, D.C., up to noon of May 1, 1903. The work consists of (1) Cleaning public alleys, (2) Cleaning unimproved streets, (3) Cleaning by machine, sweeping or flushing improved streets and avenues. Separate proposals will be received for each class of work. Specifications, forms of proposals, and all necessary information furnished upon application to the Superintendent of Street Cleaning Department. H. B. F. MACFARLAND, H. L. WEST, JOHN BIDDLE, Commissioners of the District of Columbia. 14-6t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., March 31, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p. m. (Mountain time), May 1st, 1903, and then opened, for furnishing all material and labor necessary for the construction of about 1,850 ft. of 6-in. Sewer at Fort D. A. Russell, Wyo. Full information, blank forms, plans and specifications furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, St. Paul, Omaha, Ft. Riley, Kan., and Denver. United States reserves the right to accept or reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposal for Sewer System at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 14-4t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., April 2, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p.m. (Mountain time), May 2, 1903, and then opened, for furnishing all material, machinery, tools and labor necessary for sinking at least two (2) and not exceeding six (6) tubular deep wells at Fort D. A. Russell, Wyoming. Specifications, instructions to bidders, and blank forms of proposal furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, Omaha, St. Paul, and Denver. United States reserves the right to reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposals for Sinking Wells at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 14-4t

ENGINEER OFFICE, U. S. Army, Room 2, Custom House, Norfolk, Va., March 30, 1903.—Sealed proposals for Rock Removal and constructing Riprap Dam in Roanoke River, near Weldon, N.C., will be received here until 12 m., April 30, 1903, and then publicly opened. Information furnished on application. 14-2t-eow

WEST POINT, N. Y., April 1, 1903.—Sealed proposals, in duplicate, will be received here until 12 m. May 1, 1903, for building materials, plumbing materials, Hardware, Tools, Paints, Glass, Furnace and Range Parts and other miscellaneous stores specified on schedules to be had upon application here. The right is reserved to reject or accept any or all proposals, or any part thereof. Enclose proposals in envelopes marked "Proposals for Military Supplies," and addressed to Q. M., U. S. M. A. 14-5t

U. S. ENGINEER OFFICE.—Washington Barracks, D. C., April 1, 1903.—Sealed proposals for Portland and natural cement, sand, gravel, construction of roads and sidewalks, including grading and retaining walls, sewers, drains and water supply system, at Washington Barracks, D. C., will be received at this office until noon, April 30, 1903, and then publicly opened. Information furnished on application. JOHN STEPHEN SEWELL, Captain Engineers, Acting Q. M., U. S. A. 14-4t

For Proposals see pages XXXI., XXXII. of Advertisements and pages 188, 189 of Supplement.

ADVERTISERS' CLASSIFIED DIRECTORY.

CONTINUED ON PAGE 190.

Air Brakes.
Westinghouse Air Brake Co, Pittsburg, Pa

Air Compressors.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Air Compressor Wks, 26 Cortlandt st, N Y
American Well Works, Aurora, Ill
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 212-17 Herman bldg, Milwaukee
Clayton Air Compressor Works, 114 Liberty st, N Y
d'Auria Pumping Engine Co, Drexel bldg, Phila
Fairbanks, Morse & Co, Chicago
General Pneumatic Tool Co, Montour Falls, N Y
Gray-Blaisdell Co, Bradford, Pa
Guild & Garrison, So 10th st, Brooklyn, N Y
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati O
McGowan, John H, Co, Cincinnati, O
McKiernan Drill Co, 170 Liberty st, N Y
Norwalk Iron Works, So. Norwalk, Conn
Rand Drill Co, 128 Broadway, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa

Air Drill.
Columbus Pneumatic Tool Co, Columbus, Ohio

Aluminum
Pittsburg Reduction Co, Pittsburg, Pa

Annealing Boxes.
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa

Artesian Wells.
Bacon Air Lift Co, 100 Broadway, New York
Cole Bros, 102 Fulton st, New York
Conlan, P H & J, Newark, N J
Cook Well Co, St. Louis, Mo.
Gregory, Elisha, 123 Liberty st, New York
Phillips & Worthington, 11 Broadway, New York
Stothoff Bros, Flemington, N J
Williams Bros, Ithaca, N Y

Artesian Well Tools and Supplies.
Star Drilling Mach Co, 104 Fulton st, New York

Asphalt.
Commercial Asphalt Co, 11 Broadway, New York
Sicilian Asphalt Paving Co, Times bldg, New York
Warren Bros Co, 99 Federal st, Boston

Asphalt Machinery.
Cummer, F D. & Sons, Cleveland, O
Erie Machine Shops, Erie, Pa
Iroquois Iron Works, Buffalo, N Y

Batteries (Storage).
Coho & Co, H B, 114 Liberty st, New York

Bearings (Ball and Roller.)
Ball Bearing Co, 2322 Market st, Philadelphia
Bantam Mfg Co, Bantam, Conn
Standard Roller Bearing Co, Phila Pelphia

Balances. (Assay and Analytical.)
Ainsworth, Wm. & Sons, Denver, Colo

Belt Dressing.
Dixon, Jos., Crucible Co. Jersey City, N J
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Canvas.)
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Chain)
Aultman Co, Canton, O
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Philadelphia

Belting (Leather)
Graton & Knight Mfg. Co, Worcester, Mass

Belt Holders.
Phelps Bros & Co, Wellington, O

Belt Lacing. (Steel.)
Bristol Co, Waterbury, Conn

Blast Furnaces.
Girard Boiler & Mfg Co, Girard, O
Means & Fulton Iron Works, Birmingham, Ala
Riter-Conley Mfg. Co, 55 Water st, Pittsburg, Pa

Blocks and Sheaves.
American Hoist & Derrick Co, St Paul, Minn
Boston & Lockport Blk. Co, 160 Commercial st, Boston
Hunt, C W Co, Richm'd Terrace, W N Brighton, S I
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
Yale & Towne Mfg Co, 9-13 Murray st, New York

Blowers.
American Blower Co, Detroit, Mich
Boston Blower Co, Business st, Hyde Park, Mass
Buffalo Forge Co, Buffalo, N Y
Mass. Fan Co, Waltham Mass
Roots, P H & F M Co, Connersville, Ind
Sturtevant, B F Co, Boston, Mass

Blue Printing Apparatus.
Elliott Electric Blue Print Co, Pittsburg.
Keuffel & Esser Co, 127 Fulton st, New York
Pittsburg Blue Print Co, 1505-C Park bldg, Pittsburg
Soltmann, E G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
Young, C H & Co, 15 Exchange st, Boston

Blue Print Paper.
Elliott Electric Blue Print Co, Pittsburg
Spaulding Print Paper Co, 44 Federal st, Boston
(see also Instruments, Engineering, etc.)

Boiler Supplies.
Glasgow Iron Co, Pottstown, Pa

Boilers.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bacon, Earle C, 26 Cortlandt st, New York
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Fairbanks, Morse & Co Chicago
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Works, East Boston, Mass
Iroquois Iron Works, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego, N Y
Leffel, Jas. & Co, Springfield, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
McNeil, Jas. & Bro, 29th & Railroad sts, Pittsburg
Means & Fulton Iron Works, Birmingham, Ala
Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Sharon Boiler Works, Sharon, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Variety Iron Works Co, Cleveland, Ohio
Warren City Tank & Boiler Works, Warren, O

Boilers (Water Tube.)
Babcock & Wilcox Co, 29 Cortlandt st, New York
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Keeler, E, Co, Williamsport, Pa
Meehan Boiler Construction Co, Lowellville O
Walsh, W J, Holyoke, Mass

Bolt Clippers.
Helwig Mfg Co, St. Paul, Minn

Bolts. (Expansion.)
Church, Isaac, Toledo, O
Evans, F H, 596 Kent ave, Brooklyn
Steward & Romaine Mfg Co, 120 N 6th st, Phila

Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis

Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md

Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, Newv Cumberland, West Virginia
McAvoy Vit Brick Co, 1345 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Tomkins, Calvin, 120 Liberty st New York
Western Brick Co, Danville, Ill

Brick. (Fire.)
Maurer, Henry, & Son, 422 E 23d st, New York
New York Pottery Co. 12th ave & 36th st, N Y
Syracuse Stoneware Co, Syracuse, N Y

Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago

Bridge (Concrete).
Aberiaw Construction Co, Boston, Mass

Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st, New York
Vulcan Iron Works, Chicago

Bridge Railings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros, Bridge & Iron Co, St. Louis, Mo

Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Rush st & B & O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N Y
Easton Foundry & Machine Co, Easton, Pa
Eichleay, Jr., & Co., John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Havana Bridge Works, Montour Falls, N Y
Joliet Bridge & Iron Co, Joliet, Ill
Kenwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, T A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co, Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phoenix Bridge Co, Phoenixville, Pa
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 220 Market st, San Franc
Scaife, W B, & Sons Co, Pittsburg, Pa
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha, Neb
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Vaile & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works, Wabash, Ind

Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago

Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 94 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Stuebner, G L, Long Island City, N Y
Union Iron Works, Hoboken, N J

Bumping Posts.
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago

Bunkers (Suspension.)
Berquist, A S, 515 Bedford ave, Brooklyn, N Y

Burners (Oil.)
Hammel, C A 140 Fifth st, Los Angeles, Cal

Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Telpherage Co, 20-22 Broad st, New York

Calking Yarn and Tools.
Ogden, J. Edward, Co, 149 Cedar st, New York

Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co, Bedford bldg, Chicago

Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y

Car Trucks.
Brill, Co, J G, Philadelphia, Pa

Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y

Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Cifros Co, Chas, Cayonne, N J
Fairbanks, Morse & Co, Chicago
Ingoldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 68 Broad st, New York
National Drill & Mfg Co, 134 La Salle st, Chicago
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, G L, 175 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Narrow Gage.)
Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel. Arthur, 68 Broad st, New York

Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburgh, N Y
Columbia Machine Works, 247 Chestnut st, Brooklyn
Crane & Co, Inc, A M. The Rookery, Chicago
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 102 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 253 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Castings (Steel.)
Crane & Co, Inc, A M, The Rookery, Chicago

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Conaway, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Glens Falls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Heidelberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Thorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 150 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 66 Maiden Lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Chain-Making Machinery.
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y

Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Read, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co. 14-21 Park Row, N Y
Simpson H S, Mfg'c Agt, Electric bldg, Cleveland
Steubner, G L, 175 Third st, Long Island City, N Y

Colleges (Engineering.) (see page IV.)

Concentrators.
Allis-Chalmers Co. Home Ins bldg, Chicago

Concrete Mixers.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractor's Plant Co, 37 Pittsburg st, Boston
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Eng & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y
Smith, T L, 134 Tenth st, Milwaukee

Concrete Building Apparatus.
Farrell, Thos C, Washington, New Jersey

Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works, Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Conduits (Pipe.)
American Vitrified Conduit Co, 170 Broadway, N Y
Blackmer & Post Pipe Co, St. Louis, Mo
Camp, H B. Co, 170 Broadway, New York
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 39 Cortlandt st, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'g Co, 1236 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, NY
Eichleay, John, Jr, Co, Pittsburg
Esson, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 37 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 15-21 Park Row bldg, N Y
O'Rourke, John F, Park Row bldg, New York
Philippine Eng & Const'n Co, P.O. Box 572, Manila, P.I
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 4129 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 14-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Crane & Co, Inc, A M, The Rookery, Chicago
Shannon, J Jacob, & Co, 14 Market st, Philadelphia

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 58 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st. Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote W'ks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 138 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago.

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Lowe Wrecking & Diving Co, 2 Coenties slip, N Y

Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & Son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Hein Furniture Co, Toledo, O

Draftsman's Supplies. (see Instruments.)

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Dredging & Filling Co, 15 Cortlandt st, New York
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Featherstone Fdy & Mach Co, 346 N. Halsted, Chicago
Hayward Co, 57 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo

Drilling and Boring Machines (Portable).
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 26th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools; also Rock Drills).

Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila

Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass

Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 129 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Ruggles Coles Engineering Co, 41 Cortlandt st, N Y
Simpson, H S, Mfg's Agt, Electric bldg, Cleveland
West Pulverizing Machine Co, Jersey City, N J

Dynamite (see Explosives).

Dynamos.
C & C Electric Co. Central R R bldg, New York
Coho & Co, H B, 114 Liberty st, New York
General Electric Co, Schenectady, N Y
Storey Motor & Electric Co, Harrison, N J
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa

Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa

Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia

Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 71 Broadway, N Y

Employment Bureaus.
Boston Engineering Agency, 7 Water st, Boston
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock blk, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Broadway, N Y
New York Engineering Agency, 35 Warren st, N Y

Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Chicago, Ill
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 31 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 369 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struthers-Wells Co, Warren, Pa
Temple Pump Co, 18th Place, Chicago
U. S. Wind Engine & Pump Co, 20 Water st, Batavia, Ill
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland, O
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W., Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 3010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co. Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 346 N. Halsted, Chicago
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas. & Co, Springfield, O
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Vulcan Iron Works, Wilkesbarre Pa

Engines (Traction).
Aultman Co, Canton, O
Heisler, Chas. L, Erie, Pa
Kelly O S Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

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ADVERTISERS' CLASSIFIED DIRECTORY.

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Excavators and Excavating Machinery (see Ditching and Excavating Machinery and Steam Shovels.)

Expanded Metal.
Assoc Exp Metal Cos, Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 40 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 910 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 25 Church st, New York
Robertson, Jas L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Valle Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
Jones National Fence Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Filet. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Valle Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
Maignen Filtration Co, 1310 Arch st, Philadelphia
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B, & Sons Co, Pittsburg

Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 192 Fulton st, New York

Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass

Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Hennebique Patents 1123 Broadway, N Y
Metropolitan Fire Proofing Co, Trenton, N J
Roebling Construction Co, 121 Liberty st, New York
St Louis Expanded Metal Fireproofing Co, St Louis
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)

Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York

Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y

Fittings (Flanged).
McLeod Co, 95 Liberty st, New York

Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Rempis & Gallmeyer Foundry Co, Grand Rapids Mich

Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y

Flue Lining (Fire Clay)
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y
Syracuse Stoneware Co, Syracuse, N Y

Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago Ill

Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md

Forges (Portable).
Buffalo Forge Co, Buffalo, N Y
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa

Forgings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 508 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa

Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces (Gas).
American Gas Furnace Co, 23 John st, New York

Furnaces (Oil).
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel).
General Fireproofing Co, Youngstown, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Galvanizing Kettles.
Columbiana Boiler Co, Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
Gas Machinery Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U. S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
Jones National Fence Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith, S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl St, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Stuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone, also Paving Blocks).

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3876 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co, Geo. V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M, Co, Bay City, Mich
Heyl & Patterson, 49 Water st, Pittsburg
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co., 7 Broadway, N Y
Pawling & Harnishfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steel Cable Engineering Co, 120 Liberty st, New York
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y

Hoists (Electric).
Hunt, C W, Co, Richmond Terrace, WN Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York

Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 1212-17 Herman bldg, Milwaukee

Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 508 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J

Hose (Metal).
Moore Chas. C, & Co, 32 First st, San Francisco

Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y

Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston

Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co. Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loomer Valve & Mfg Co, Torrands, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood. R D, & Co, Philadelphia, Pa

Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York

Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co, 134 Main st, San Francisco
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D. & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco

Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co. 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y

Injectors.
Hayden & Derby Mfg Co, 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio

Instruments (Engineering, Drafting).
Ainsworth, Wm, & Sons, Denver Colorado
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Altenedler, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 37 Adams st, Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 314 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly Spring Garden st & Ridge av, Phila
Hetterschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Cal
Mahn & Co, 300-302 Olive st, St. Louis
Pfister, Hegm, 428 Plum st, Cincinnati, O
Prince, L E, 908 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 439 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 43d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Steckenreiter Mfg Co, Chicago, Ill
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 7th st, Philadelphia

Insulating Materials.
Standard Paint Co, 103 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Greco, Jas, 106 Bayard st, New York
Italo-American Trust Co, 725 Carpenter st. Phila
Yuzzolino, N, 73 Mulberry st, New York

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kitson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 114 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carter, W J, 36th and Railroad st, Pittsburg, Pa
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk, Chicago
Donaldson & Newton, 421 Chestnut st, Philadelphia
Efroi Co, Chas. Bayonne, N J
Everson & Co, E W, Roxbury Crossing, Mass
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S, Co, Empire bldg, Pittsburg
National Con. Co, E Cambridge, Mass
Pease Car & Loco Works, 2-7 Dearborn st, Chicago
Saxton, J C, 18 Broadway, New York
Toomey, Frank, 127 N. 3d st, Philadelphia
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Warren-Burnham Co, 7 East 42d st, New York
Whitney, O R, 39 Cortlandt st, New York
Young, E R, & Sons, Titusville, Pa

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 508 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 96 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg, Pa

Meters (Water).
Buffalo Meter Co, 368 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 79 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton, E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S. Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 138 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington

Motors (Electric). (see Dynamos.)

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio

Oil Pumps.
Sterrett Pump Co, 69 E 6th st, St. Paul

Oilless Bearings.
No Am Metaline Co, 6 West ave, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro
Robertson, Jas L, & Sons, 192 Fulton st, New York

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Michigan Paint Co, 65 Woodland ave, Cleveland, O
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sherwin-Williams Co, Cleveland, O
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York

Paint (Cold Water).
Bird & Co, J A & w, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Patterns (Wood).
Balkwill Pattern Works, 970 Hamilton st. Cleveland

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J. & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith, J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 360 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y

Pipe (Riveted Steel).
Columbiana Boiler Co, Columbiana, O
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Weigele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago

Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Bros & Co, Akron, O
Syracuse Stoneware Co, Syracuse, N Y

Pipe (Wooden).
American District Steam Co. Lockport, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila, Pa
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Low Wrecking & Diving Co, 2 Coenties Slip, N Y

Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

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ADVERTISERS' CLASSIFIED DIRECTORY.

Pipe Tapping Machines. (see Tapping Machines)

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Brass Works, Cascade st, Erie, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Millar, Chas, & Son Co, Utica, N Y

Pneumatic Tools.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
Heiwig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Press (Artificial Stone).
Palmer, Noyes F, 150 Snediker ave Brooklyn, N Y

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Estè, Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins bldg, Chicago
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark J C, Box 325, Atlanta, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 170 Broadway, New York
Newell Mfg Co, 149 Broadway, New York
Smidth, F L & Co, 66 Maiden lane, New York
West Pulverizing Machine Co, Jersey City, N J

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 52 Keap st, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping-Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendallville, Ind
Goulds Mfg Co, Seneca Falls N Y
Guild & Garrison, So 10th st, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heisler Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 120 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
Toomey, Frank, 127 N 3d st, Philadelphia
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 309 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 160 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y

Pumps (Artesian Well).
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 309 No Main st, Los Angeles, Cal

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 15th Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 180 Commercial st, Boston
Edson Mfg Co, 255 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm. E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Snow Steam Pump Works, 120 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 309 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 135 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 30 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co Cotton Exch bldg, N Y

Rails (Relaying).
Donaldson & Newton, 421 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 302 Lewis bldg, Pittsburg
Johnson, Chas F, 909 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon, C J, 308 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Crane, A M, & Co, Rookery, Chicago
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Males Co, Ætna bldg, Cincinnati
Pease Car & Loco Works, 277 Dearborn st, Chicago
Schoonmaker, A G, Co, 126 Liberty st, New York
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 136 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway. New York

Riveting Machines.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Allen, John F, 370 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 128 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Stuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 109 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Liberty st, N Y
Rand Drill Co, 128 Broadway, New York
Rogers, John M, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J

Rolling Doors, Partitions, etc. (Steel)
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 103 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 15 Park Row, New York

Schools (Correspondence).
Am. School at Armour Inst of Tech, Chicago
International Correspondence Schools, Scranton, Pa
Penn. Corres. Schools, Hamilton bldg. Pittsburg
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Stuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Permanent Mfg Co, Am Trust Bldg, Cleveland, O
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Klanear Mfg Co, Columbus, Ohio

Skylights.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J
Valle & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governors.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 200 East Main st, Louisville, Ky
Chicago Bridge & Iron Co, Chicago
Columbiana Boiler Co, Columbiana, O
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
Meehan Boiler & Construction Co, Lowellville, O
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Theo, & Sons Co, Jersey City, N J
Snow, T W, 300 Dearborn st, Chicago
Strutners-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Walsh, W J, Holyoke, Mass
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Estè, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Estè, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel Clips.
Streeter, H A 35 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 13 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 255 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, Jr, Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3218 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
National Skylight & Const'n Co, 120 Liberty st, N Y
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, E K, Co, 120 Liberty st, New York
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 35 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 604 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal.
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1434 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Am Watchmen's Time Detector Co, 234 B'way, N Y
Imhauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Alge, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Potter Mfg Co, 2010 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 32 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 7 Ludlow st, Dayton
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia, Pa

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 47 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg, Pa
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Cornersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Millar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Thompson, J, & Co, Philadelphia

Varnish and Colors.
Sherwin-Williams Co, Cleveland, O
(see also Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio
Tucker & Vinton, 156 Fifth ave, New York

Ventilators.
Buffalo Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Auburn Wagon Co, Martinsburg, W. Va
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
Kennicott Water Soft Co, 406 Great North. bldg, Chic
N Y Continental Jewell Filtration Co, 15 Broad st, N Y
Patterson, D W, Harrison bldg, Philadelphia, Pa
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governors.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Doble, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies
Flint & Walling Mfg Co, Kendallville, Ind
Smith, A P, Mfg Co, Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 220 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 15th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co, Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Wire Drawing Machinery.
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Worm Gearing.
Morse, Williams & Co, Philadelphia, Pa

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 30th & Clearfield sts, Phila

TURN TO PAGES XXIV-V

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